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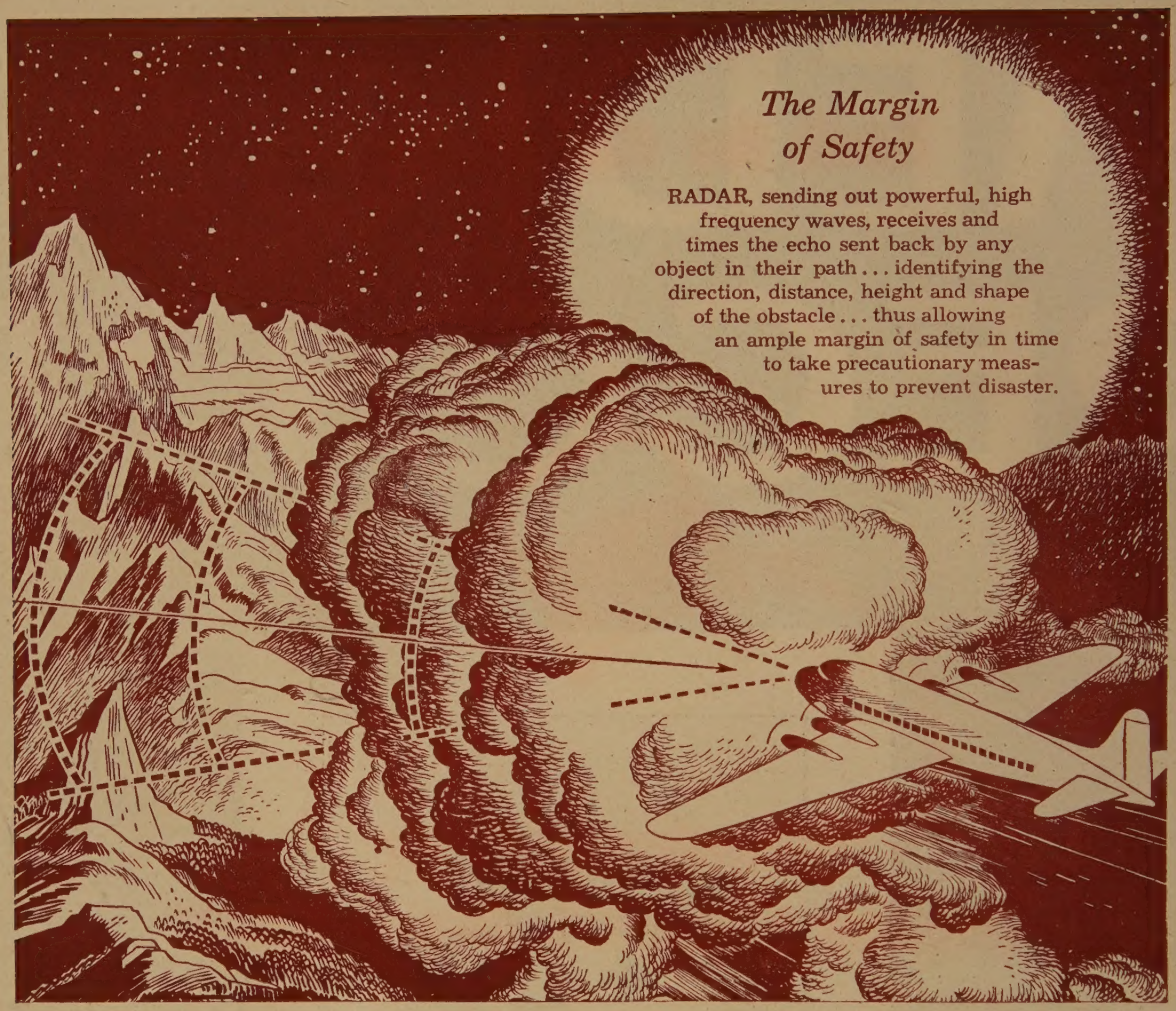
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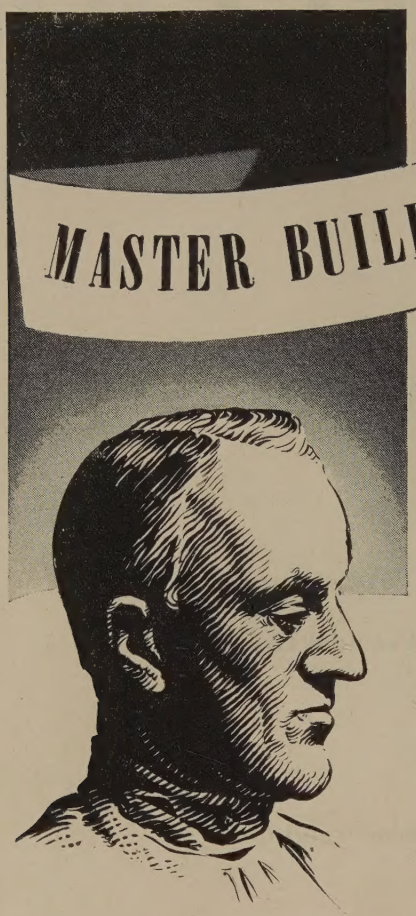

HARVEY WILLIAMS CUSHING
1869 – 1939

Although best known for his outstanding contributions to neurosurgery, Cushing's greatness lay in an insatiable pre-occupation with the physiologic processes which underlie clinical manifestations. His rich genius laid the foundation upon which is built much of our understanding of the pituitary body and the gonads.

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Shock Therapy for Mental Diseases

Dr. Nolan D. C. Lewis, director of the New York State Psychiatric Institute and Hospital, speaking on "What's What about Shock Therapy" before the National Committee for Mental Hygiene, at the thirty-sixth annual meeting, said that shock therapies in the treatment of mental diseases were still under clinical trial and evaluation in public and private hospitals for mental disorders, and advocated a "more sober scientific attitude" in respect to these therapies. He outlined the three principal procedures for shock therapy: the insulin hypoglycemic or coma method introduced by Sakel in 1928; the metrazol convulsion method advocated by Meduna in 1934; and the electroshock convulsion method proposed by Cerletti and Bini in 1938. Various combinations of these methods were used also. Other drugs that had been tried out by research groups were nitrous oxide, ammonium chloride, triazol, picrotoxin and sodium amytal.

Asserting that "a more scientific reporting of results is needed," Dr. Lewis concluded that, based on available evidence in the methods and results of shock therapy, one was justified in using it on carefully selected patients, awaiting the further contributions required to assign it to a final place in mental medicine. Insulin shock therapy had not fulfilled the initial expectations, he said. Its use had become more and more curtailed, due in part to war conditions, with the shortage in physicians and nurses, while the easier applied electroshock therapy had increased notably during this period. Moreover, metrazol as a convulsive drug had declined in popularity in favor of electroshock. Results with insulin therapy seemed to justify its continued use in the various forms of schizophrenia. Electroshock was becoming the method of choice because it was the least complicated to carry out.

Patients in the depressed phases of manic-depressive psychoses could be treated successfully by electroshock in the majority of cases, a recovery rate of eighty to ninety percent being reported. In acute manic syndromes the results are said to be about as good.

Summarizing his conclusions regarding the various shock therapies, Dr. Lewis said that the extremes of enthusiasm and skepticism over the effects of the treatment had abated to some extent and it was time they were replaced by a more sober scientific attitude characterized by attempts to discover what it is all about. The usefulness of any type of shock therapy in treating psychoneuroses remains to be established. Favorable responses had been rare in the fifty psychoneurotics treated at the Psychiatric Institute.

As special problems for investigation he named the following: the exact nature of certain complications, such as acute pulmonary and circulatory disorders; additional studies of cardiovascular responses and hypertensive disease; causes of relapses by patients treated; more extensive studies of cerebral physiology and neurochemistry; the rôle of supplementary psychotherapy in establishment and maintenance of mental equilibrium; a more careful classification of patients treated and the results obtained, with a long period of follow-up checking.

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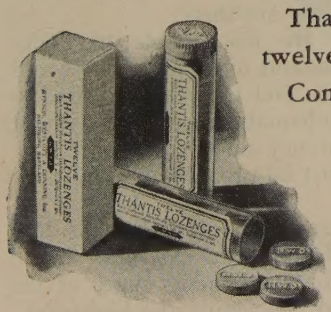

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Open Forum

Rural Medical Care

T. SWANN HARDING
Falls Church, Va.

William E. Garnett, rural sociologist at Virginia Polytechnic Institute, is a rare and unusual social scientist. He believes no piece of research in the social sciences is complete until the findings have been implemented and put to practical use. When, with Allen David Edwards, he did a masterful and definitive study of Virginia's Marginal Population—A Study in Rural Poverty, he wound it up with suggestions for corrective measures. The study, of course, included deficient medical care.

At the end he remarked: "Normally the responsibility of research workers ends with a report of their findings. If a program of corrective measures is needed, its formulation is usually left to others. In this instance the unusual relationships of the present study, and the pressing need of public policies for dealing with the more socially undesirable conditions and trends considered, make it desirable to attach to the research report a summary of possible corrective measures."

Among the suggested corrective measures was increased medical assistance through the Farm Security Administration or some similar plan, increased public aid for hospital care coupled with some plan of health and hospital insurance priced within the financial limitations of the clients, an extension of clinics of various kinds under the public health service, and related measures.

Leland B. Tate, Garnett, and a colleague have made an informative study of the Health and Medical Care Situation in Rural Virginia, published as Bulletin 363 of the Virginia Agricultural Experiment Station at Blacksburg, and dated October 1944. This provides a complete analysis of the problem. As is customary in such studies, rural doctors and hospitals are too few and too expensive to do the job that needs to be done, and a considerable percentage of people simply lack medical care.

Rural health conditions are consistently inferior to urban. There is a definite shortage of physicians, dentists, and nurses in certain parts of the State, there being five thousand persons per physician in some counties, whereas fifteen hundred per physician is a more reasonable standard. In some rural districts there are ten thousand persons per dentist, while Virginia's one hundred and twelve hospitals and sanatoriums are located mainly in the cities. While two-thirds of the people live in rural territory, only one-third of the general hospitals for local use are there.

Doctors and hospitals are inaccessible to many rural families. An undue amount of chronic illness and costly relief results from the fact that so many underprivileged people get inadequate care. Prepayment plans are still in their infancy and much more tax-supported medical care must be provided if conditions are to be bettered.

"There seems to be a growing belief that the laymen and medical men of the state can and should cooperate in a program for overcoming many of the present health hazards and in meeting the high medi-

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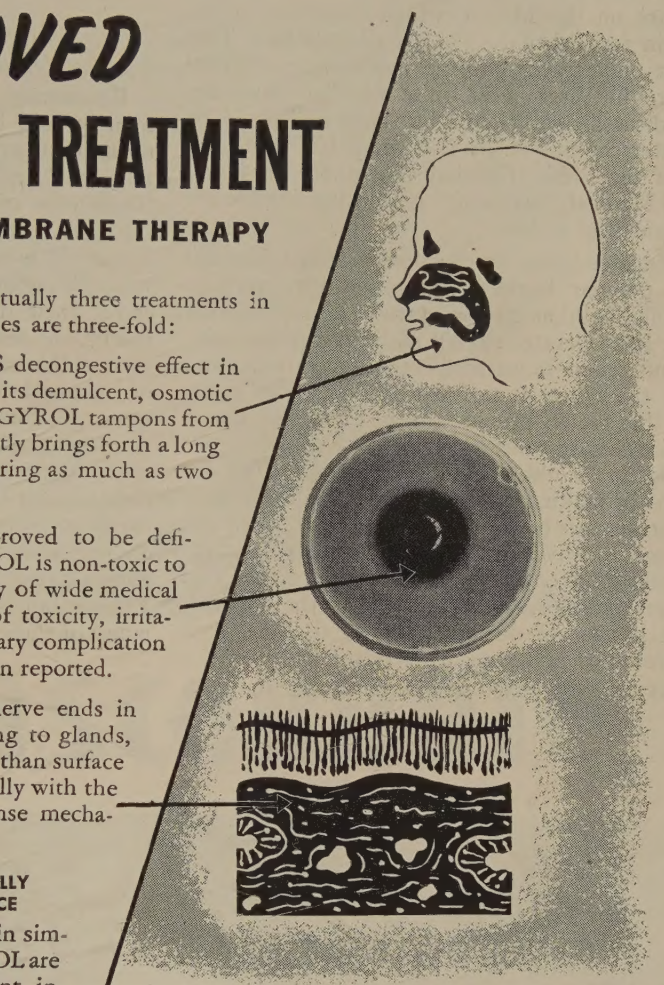

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cal costs in more efficient and effective ways; and, that the medical profession must become less money-minded before the masses can have and pay for adequate medical care." So the bulletin ends.

But Prof. Garnett does not end there. His Rural Medical Care on the March, which appeared in the VPI Bulletin for February 1945, indicates this. This bulletin not only traces out the inadequacy of rural medical care in Virginia in quite popular language, but also indicates clearly what has been and could be done to better conditions. Prof. Garnett has long been secretary of the Public Opinion Committee on Rural Health and Medical Care, which is working hard to get new plans put into action.

The Committee issues much mimeographed material and many popular leaflets, trying in every way to arouse public opinion to the nature of an existing emergency. It cooperates closely with all medical, educational, and religious institutions, organizations, and agencies in the State. It advocates adoption of a ten year plan, that would provide for an expanded, correlated hospital-health-center system, with which every qualified doctor would be affiliated. It seeks to develop means of making this system available for both curative and preventive work among all people in the State through membership in health associations, expanded insurance covering hospital, surgical, and medical care, and increased public aid to the medically indigent in case of demonstrated need. Finally, it seeks expansion of public health services in general.

Any who are interested could communicate with Rudolph Michael, editor, Virginia Agricultural Extension Service, Blacksburg 12, Va. There is considerable of interest to all in the publications issued. The latest step is an organized move for the establishment of a State Health and Medical Care Council.

Prevention of Rheumatic Fever

To the Editor:

Rheumatic fever (*acute* rheumatism) is most common in cold humid climates like the British Isles. It most frequently affects adolescents in their teens, but, until the beginning of the second world war, not a single case of rheumatic fever had ever occurred in the well known British private (called "public" in England) boarding schools. These private school boys were all adolescents in their teens. For many generations, their diet had been based on roast beef, beef steaks, and a few lamb chops in between, while the staple food of the low income groups, with their high incidence of rheumatic fever, consisted of milk, sugar, bread and butter, and jam. I have therefore come to the conclusion that *a diet rich in meat creates immunity against rheumatic fever.* This theory of mine was proved to be right during the first world war when the comparative rarity of rheumatic fever among British soldiers in the French trenches was striking. For four winters, they were exposed to the cold humid weather of northern France, but they got plenty of "bully beef", more than many of them had ever eaten in all their lives.

Alfred Rosskamm Ross, M.D.
New York, N.Y.

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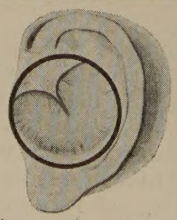

SYMPTOMS: Pain, Fever, edema, leucocytosis, sense of fullness and impaired hearing. TREATMENT: Relief of pain and inflammation—Auralgan. ACTION: Decongestant, analgesic, bacteriostatic.

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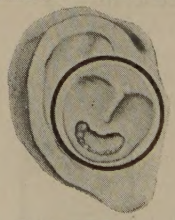

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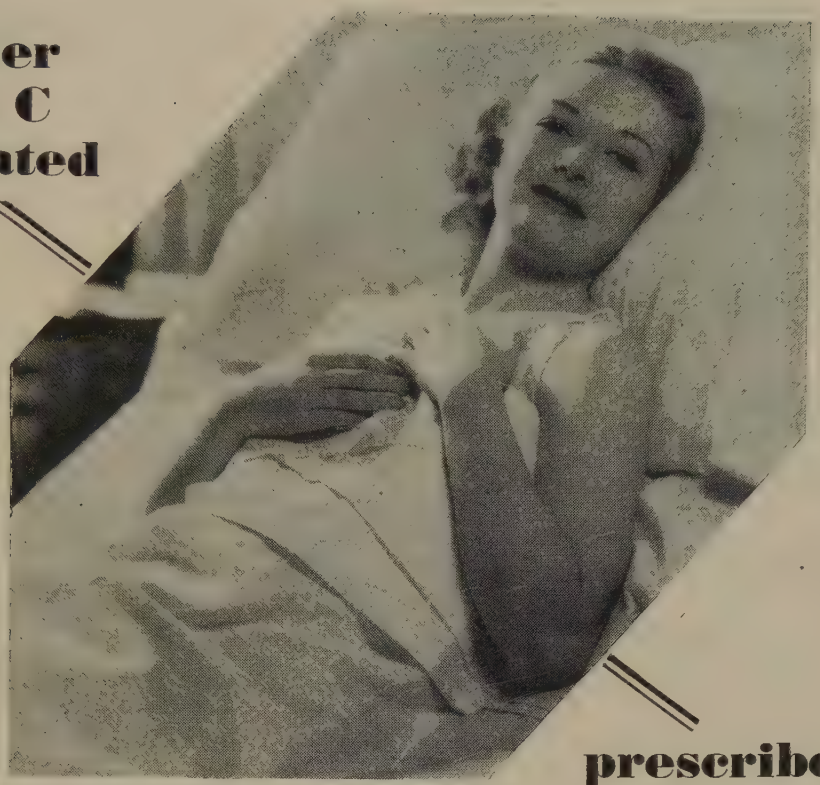

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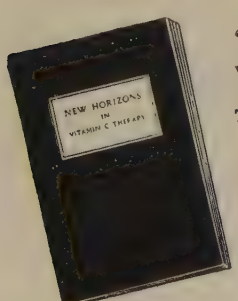

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To the Editor.

Fifteen or twenty years ago I had occasion to treat an office patient for a mild tuberculous infection of the larynx and upper bronchial tubes. The patient, a middle-aged man, said he had been treated during the past year for a distressing bronchial cough, but with little benefit.

By way of trying what I believed to be a safe experiment, I applied an oily solution of petrogen-iodine to the throat in the form of a very fine spray, using a strong atomizer with compressed air force. The patient was treated several times each week for the period of one month and a half. There was gradual improvement, and during the last two weeks of treatment the patient reported that he felt much better. The cough had almost disappeared and he was no longer kept awake at night by the distressing cough and heavy expectoration. The patient, who was a blacksmith, employed by the city, was naturally highly elated when no longer kept awake after a hard day's work. When last seen he said he felt entirely relieved, had regained a number of pounds of lost weight, and had the strength for his daily work, without the feeling of exhaustion and the difficulty in breathing from which he had been suffering.

Recently, I was troubled with a severe cold, accompanied by a distressing bronchial cough and heavy expectoration. As there was no cough mixture at hand, and during a damp, cold night, I concluded to try the iodine experiment again. Into a thick glass jar I put a pint of boiling water, added about thirty drops of fresh tincture of iodine to the hot water, and inhaled the rising vapor. After ten or a dozen strong inhalations the physiological effect of the iodine was distinctly felt, and the paroxysms of coughing were promptly relieved. As a long time believer in the therapeutic value of age-old iodine, I thought that in the form of vapor it might be used to advantage in the treatment of pulmonary tuberculosis.

ROBERT H. MacNAIR, M.D.
Kansas City, Mo.

South American Scientists Come to the United States for Study

Several South American republics are sending some of their best health workers for specialized training in this country, according to a press dispatch from the Office of Inter-American Affairs. Sanitary engineers, physicians, nurses, social service workers, and members of allied professions are among the group studying in the United States through the Institute of Inter-American Affairs. One hundred and twenty-five professional men are expected to study this year in North American colleges and universities. They will specialize in their choice of thirty selected subjects, including medicine, nursing, nutrition, designing and construction of hospitals, contagious disease control, sanitary engineering, industrial hygiene, and various other fields of public health. The institutions which they will attend are the Mayo Clinic, Philadelphia Babies' Hospital, Columbia, Harvard, Michigan, and Tulane Universities; and the School of Tropical Medicine in Puerto Rico. They also will do field work in the health departments of various states.

...remove the mask of nasal congestion!

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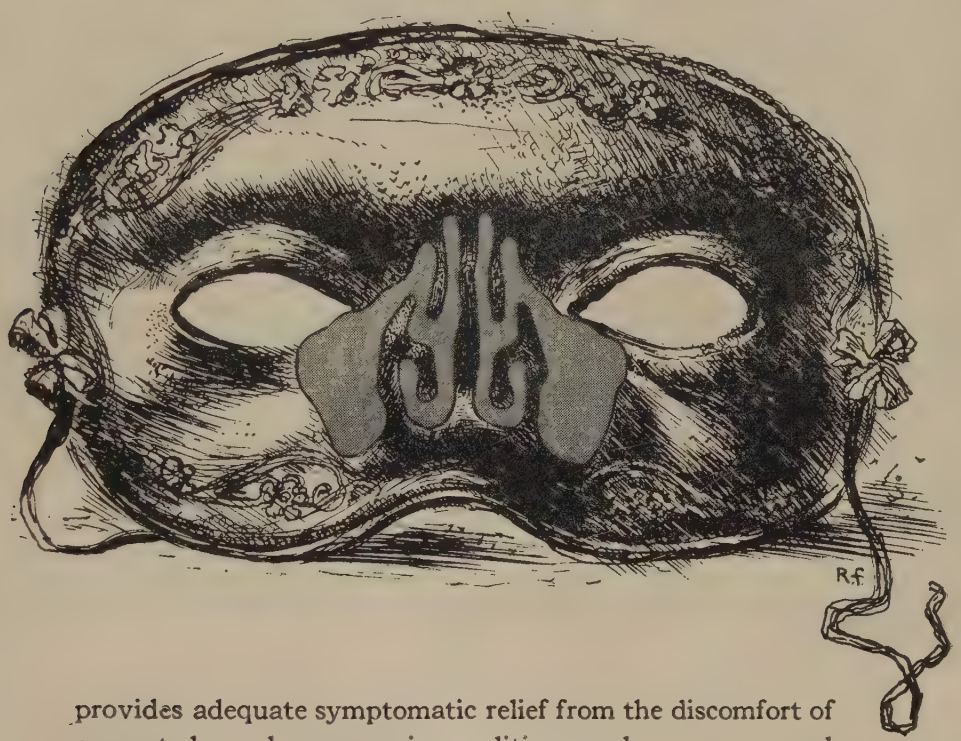

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Mental Disorders an Important Public Health Problem

Speaking on "Psychiatric Plans of the U. S. Public Health Service," at the annual meeting of the National Committee for Mental Hygiene, Dr. Robert H. Felix, medical director of the Mental Hygiene Division of the U. S. Public Health Service, stated that mental disorders had become a public health problem of paramount importance and proposed a four-point program to deal with it. He proposed a simultaneous attack on these four fronts: Outpatient services in clinics, or prophylactic care; improved in-patient care in hospitals; training of personnel and dissemination of information; and research directed both to throw light upon the etiology, nature and mode of spread of neuropsychiatric disorders, and to develop more efficacious methods of diagnosis and treatment. "In all times those illnesses which disabled or destroyed large numbers of the population have been recognized as a hazard to the public health and have been attacked and brought under control by coordinated public effort," said Dr. Felix. "Certainly a type of disorder which fills over half of all the hospital beds in the country in addition to rendering an untold number of persons incapable of carrying their full load of social and economic responsibilities, such as is the case with the neuropsychiatric disorders, must be considered a public health problem of the first importance. The time has arrived to come to grips with this great plague.

"The same broad principles of public health apply to the problem of mental illness as to the problems of tuberculosis, venereal disease and malaria. We must find the cause, develop better methods of treatment, train competent personnel to work in the field, care for the ill and educate the public. Since the problem of mental illness is one falling in the field of public health, the U. S. Public Health Service is vitally interested in developing a program designed to most effectively bring this condition under control. . . . The problem must be attacked on all fronts simultaneously, however, and each line of endeavor must be integrated with the other three."

Casualties of World War II

Sixty-three percent of the wounds received in World War II were those of the upper and lower extremities, with the lower extremities the heaviest proportion, according to Major General Norman T. Kirk, Surgeon General of the Army. There were 207,754 men of the United States Army killed in action and 571,490 wounded, he said. Of those wounded, 363,322 returned to duty after hospitalization and 25,145 died. These figures indicate that the rate of those wounded who died was nearly twice as great as in World War I. Of the 15,000 amputees of World War II, 14,000 needed artificial limbs, 7,000 of whom still remain in general hospitals. The balance either returned to civilian life or remained on duty as instructors for other amputees, the General continued. There have been two quadruple amputations and nine triple amputations recorded in World War II. Of the 14,000 needing prostheses, ninety-five percent have lost one arm or leg, and five per cent have suffered two major amputations.

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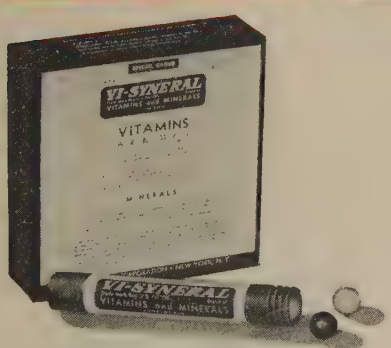

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Professional Samples and Literature

(1) Tuohy, E. L.: Handbook of Nutrition, J.A.M.A., 1943, pp. 365-384. (2) Piersol, G. M., and Bortz, E.: Ann. Int. Med. 12:964, 1939.

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Psychiatrists Organize to Meet National Emergency

The National Committee for Mental Hygiene and the American Psychiatric Association, the two leading national organizations in the field of psychiatry, have united to help meet the critical situation in which the country finds itself as a result of psychiatric problems arising out of the war. There are literally thousands of places in the field of psychiatry, where psychiatrists are needed, and there are also thousands of medical men, who had some experience in psychiatry during the war, now seeking training opportunities.

As an initial step in bringing the psychiatrically trained and psychiatrically minded medical men together with the opportunities, the American Psychiatric Association, the oldest specialty society in America, founded more than one hundred years ago, has joined forces with the National Committee for Mental Hygiene, the pioneer organization in the field of mental health, which was founded in 1909. The following official announcement was made today by the two organizations:

Captain Forrest M. Harrison MC, U.S.N., has been appointed director of a newly established Psychiatric Personnel Placement Service, designed especially to help physicians and psychiatrists make contacts with training opportunities such as residencies, postgraduate courses and fellowships, and to aid institutions in locating suitable candidates for appointments. Physicians interested in psychiatry are invited to send in full biographical statements including personal data, education, training, experience and special desires, in order that this service may be of the greatest possible assistance to them.

Deans of medical schools, superintendents of hospitals, and directors of industrial organizations, clinics and others employing or participating in the training of psychiatric personnel, are invited to submit full information regarding available positions and courses, including financial details. Foundations, universities and other agencies are asked to report pertinent fellowships in psychiatry, psychosomatic medicine and child guidance.

Inquiries should be addressed to Captain Forrest M. Harrison, National Committee for Mental Hygiene, 1790 Broadway, New York 19, N. Y .

Compulsory Health Insurance

Sixty percent of a group of physicians and experts in public health work, polled by *The American Magazine,* support President Truman's recommendation that Congress establish a system of compulsory health insurance under the social security setup. Ninety-nine percent of the experts polled believe that the American people should be protected by some form of health insurance but forty percent feel that the insurance should be private and voluntary rather than compulsory and under government operation.

The results of the poll, which was conducted by Dr. Arthur Kornhauser, of Columbia University's Bureau of Applied Social Research, appear in the January issue of *The American Magazine.* Of the authorities

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THE frequency with which the menstr al life of so many women is marred by functional aberrations that pass the borderline of physiologic limits, emphasizes the importance of an effective tonic and regulator in the practicing physician's armamentarium.

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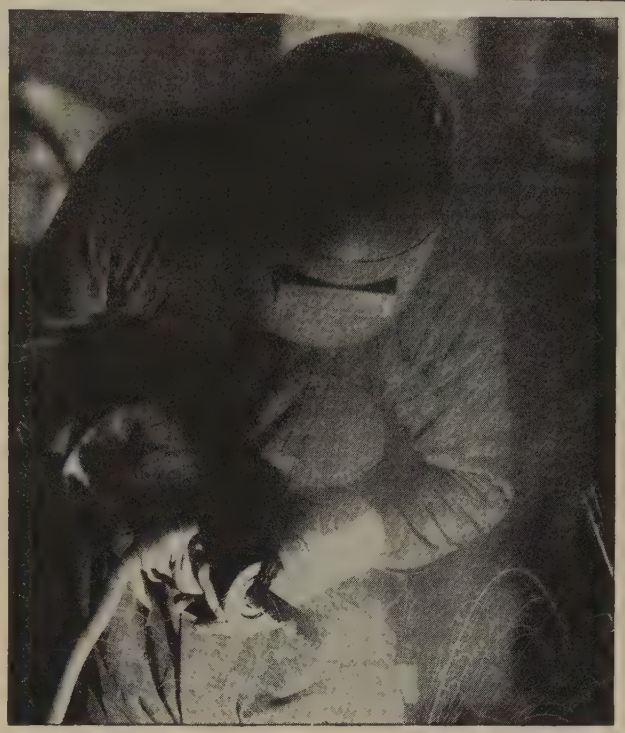

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polled more than half were physicians. The social and economic authorities favored compulsory insurance seventy-five to twenty-five percent, and the physicians divided almost evenly, according to the report.

The majority of these authorities believe that at least forty percent of the American people are receiving inadequate medical service and five out of six would have insurance payments cover both doctor and hospital costs.

In line with President Truman's recommendation, nine out of ten experts would let patients decide for themselves what physicians they would go to. Those favoring compulsory insurance under government operation argue that it will provide medical care to all at a price they can afford; it will spread the cost so widely that it won't be overloaded with people of very low incomes or by those who are poor health risks; and that the quality of service will be more uniformly maintained since minimum standards will be established and supervised on a nation-wide basis. Moreover, they think such a plan "will provide an efficient system which combines the care of insured persons with broad tax-supported services and programs for preventing disease.

Those supporting a voluntary system contend that it will provide higher quality service and encourage medical progress. They argue that government administration will be incompetent, inefficient, bureaucratic; will be run "politically" and "regiment" doctors and patients; will limit the initiative of doctors, and generally stifle medical progress and lower the standards of medical care.

Total Awards in European Theater of Operations

Medical Department personnel in the European Theater of Operations have received a total of 22,304 awards between the period of December 7, 1941, and October 1, 1945, including ninety-seven distinguished service crosses and 2,849 silver stars, according to a recent announcement by the Office of the Surgeon General. The award totals listed are exclusive of the purple heart. Enlisted men received 17,974 of the awards, officers 3,758, and nurses 572.

The 32,000 officers of the medical service in this theater (not including nurses) received four distinguished service crosses, 196 legions of merit, 4 clusters to the legion of merit, 200 silver stars, 20 clusters to the silver star, 304 soldier's medals, 2,716 bronze star medals, 308 clusters to the bronze star, 3 air medals, and 3 clusters to the air medal.

The congressional medal of honor was received by one of the 202,000 enlisted men. They also received 93 distinguished service crosses, 16 legions of merit, 2,646 stars, 110 clusters to the silver star, 202 soldier's medals, 13,779 bronze star medals, 808 clusters to the bronze star medal, 227 air medals, and 92 clusters to the air medal.

Of the maximum number of 17,838 nurses serving in this theater, four were killed in action, one was taken prisoner, and seventeen received the purple heart. They received 5 legions of merit, 3 silver stars, 4 soldier's medals, 322 bronze star medals, 1 cluster to the bronze star medal, 219 air medals, and 18 clusters to the air medal.

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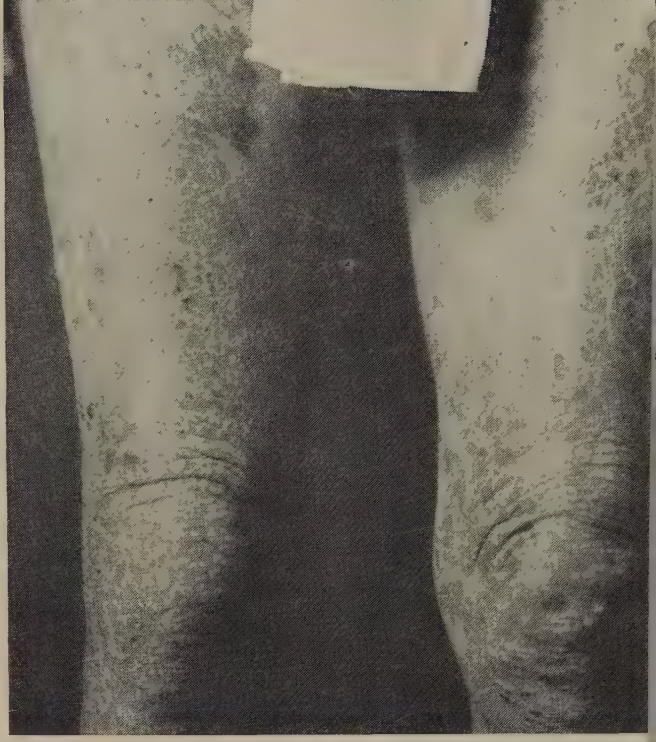

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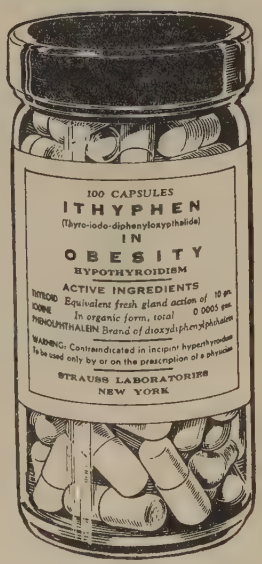

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Aconitine in the Treatment of Rheumatism

More perhaps has been written about rheumatism than any other of the numerous maladies which torment mankind. It is not easy to differentiate between those conditions of ill health which have been lumped together under the name of rheumatism, so that it is best to regard the term rheumatism as one that includes all those states popularly known as such without being too prone to analyze or criticize. It is sufficient to know that rheumatism in its many forms holds sway to a greater or less extent the world over, that it is one of the greatest pests of civilized lands, and is industry's greatest enemy.

The panaceas employed for the disease are multitudinous. Some are fairly effective but none can be said to be absolutely curative. The value of aconitine in the treatment of rheumatism was described by M. Barakin in *Ann. de Med. Phys. de Rhum* in 1939. Up to that time this alkaloid, which was well known for its analgesic properties, had not been employed otherwise. Barakin used it by iontophoresis, and experimented with various concentrations of the alkaloid and decided finally to use a one in one million solution employing 2.5 milliamperes over thirty minutes. As for the arrangement of electrodes, the active electrode was placed always towards the periphery of the affected area so as to act on the terminal filaments.

Six patients were treated in this manner and the author was well satisfied with the results. In his opinion aconitine had a definite local anesthetic effect which acted with a fairly extensive radius so that it was possible to stop pain in large areas, such as the shoulder and the hip, employing normal electrodes. It caused the prompt disappearance of edema and infiltrations, whether intraarticular or extraarticular in distribution. Cyanosis when present cleared up quickly.

National Planning for Psychiatrist Training

Dr. Thomas A. C. Rennie, director of the Rehabilitation Division of the National Committee for Mental Hygiene, at the annual meeting of the Committee said that World War II confronted psychiatry with a great problem which the 3,500 psychiatrists in America were inadequate to meet. Speaking on "National Planning for Psychiatric Education," Dr. Rennie stated that "belatedly and in desperation, psychiatrists of the armed services instituted brief indocrination courses for general doctors", and pointed out that plans must be made now to correct the dearth of trained psychiatrists. New teaching methods must be evolved, and greatly enhanced opportunities for training of psychiatrists, psychiatric social workers, and psychologists must be created. Immediate attention should be focused on the training of medical students, practicing physicians, and specialists. The latter should be recruited from young doctors at present in service, many of whom are now asking for specialty training.

There were not enough training centers, Dr. Rennie said, and added, "The chief hope lies with the Veterans Administration and its thirty-two National Planning hospitals. State hospitals, too, could help. Both groups must be radically reorganized to become centers of research and training."

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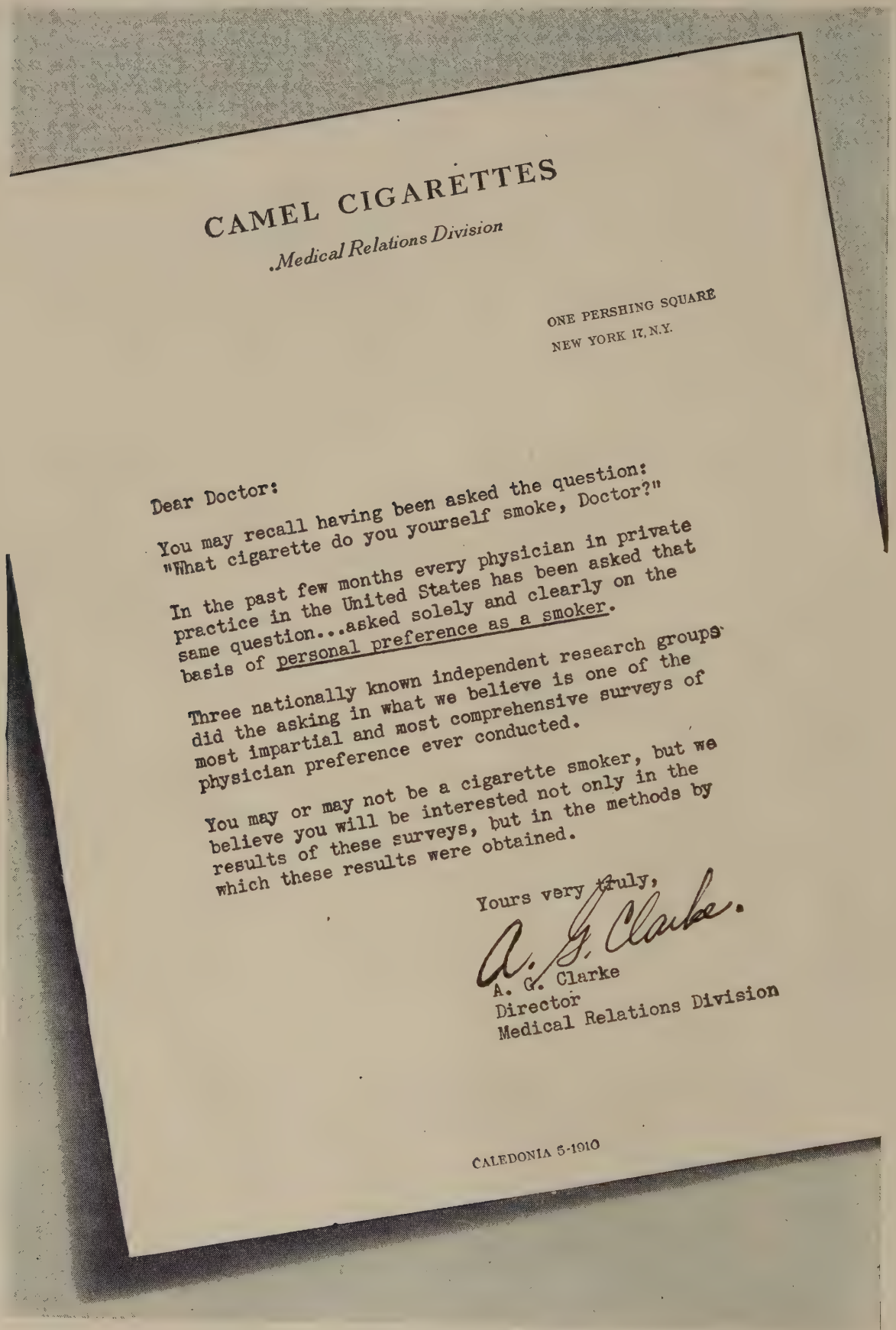

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Yours very truly,

A. G. Clarke.

A. G. Clarke
Director
Medical Relations Division

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We know that many physicians smoke, that many of them prefer Camels; but we couldn't answer the doctor's query.

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This was no mere "feeling the pulse" poll. No mere study of "trends." This was a nationwide survey to discover the actual fact . . . and from the statements of physicians themselves.

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The findings, based on the statements of thousands and thousands of physicians, were checked and re-checked.

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LETTERS FROM A PHYSICIAN TO HIS PRE-MEDICAL STUDENT SON

A. CHESTER FIELD, M.D.
New York, N.Y.

What are you going to read? That is a question which will often present itself throughout your college days and well on into the rest of your life.

It makes a great deal of difference whether you read one kind of book or some other kind; for it has often been said that good books are like companions, the influence is subtle and indirect, but it is there just the same and "gets under the skin". It is true, of course, that bad books exert an influence which is just the reverse of the above, but nobody who reads such books is ever willing to admit the fact. The censor is probably the most cordially hated of all men, save, perchance, the prohibition agent. He is ridiculed and maligned, cursed and despised. In spite of his efforts he is unable to stem the tide of obscene and filthy "literature" which has flowed through this country in a steady stream since the war. The letting down of the barriers of common decency which is so characteristic of the age has stimulated, aided and abetted the publishing and circulating of books which would never have dared make an appearance on book stalls a quarter century ago.

It is surprising that the man or woman who is a perfect "crank" as to the kind of food he or she puts into the stomach is so careless as to the kind and quality of food put into the mind. The Germans have a saying "Der Man ist was er isst". Man is what he eats, that is the food taken in is converted into his tissues and is, therefore, directly related to life. There are minds which are totally overrun with weeds and not only among the ignorant or uneducated, but among the college trained who come from the "best" families. One of the shocks which came to me early in my student life was the realization that education makes little difference to a vast horde of men and women in so far as purifying the mind is concerned. The language of the low-lived man of the street is expected of him. It is probably not his fault that his thinking is so often in terms of the stable and barnyard. He has never known high ideals because he has lived close to the ground. The lives and the thoughts of great men who have gone before have never touched him, can never reach him because he has never been "exposed" to such influences and would scarcely understand them if he were so exposed. But here at your side sits the scion of an American family which, if it had dwelt in England, for example, would have been of the nobility. What may you expect of him? Naturally thoughts which are chaste and pure, couched in language which is well chosen and with some measure of beauty in its phrases. But that is not what you get. He seems to be living in or near the gutter. His words are largely curse words set in a circumlocution of stereotyped phrases and meaningless repetitions.

Upon reading this you may say to yourself: "Oh, but Dad was a highbrow. I wonder if he never liked an off-color story? Did he never laugh at a sex story told in the Negro dialect?"

Why of course he did, my son. Your Dad was just as human as you think yourself to be, just as broad-minded, that seems to be the phrase by which one is judged nowadays, and quite fully aware of irregularities which seem to be the common lot of all men, everywhere. I have laughed till my sides ached over the "off-color" tales concerning the Irishman, the Negro and the Jew, some of them are really funny if they come by way of the front door, but too often they belong in the portfolio of the proctologist and then they are not only obscene but pathological or psychopathological. There is a limit to all things, but when a group of men starts to tell stories every limit is soon forgotten and you are likely to come away from such a gathering with a bad taste in your mouth. This means that your esthetic sense has been wounded and that the cultural side which you have tried so laboriously to build up during the years has received insults from which it is sometimes difficult to recover.

The reading habit is acquired very early. A boy of nine or ten, if he finds a good story which completely engages his imagination will forsake baseball and curl up in a corner with his nose glued to the page until the story comes to an end. It is well to let him concentrate absolutely upon it and he should be quite free from interruptions of all kinds; for there is no surer way to distract the attention and form the mind-wandering habit than to have the train of thought frequently interrupted. There are adult minds which are so agile that they can be jumped from one thing to another in quick succession, and like the bareback rider in the circus who rides any horse that he may happen to find a contact with, they are able to do a little bit of this and a little bit more of that until each and every one of their tasks is finished. There are authors, for example, who can write more than one book at a time, and indulge themselves by doing a chapter of one and then pass to a chapter of another without breaking any sequence, but this quality is not a desirable one to try to cultivate because, in most cases, it leads to diffusion and a jerky disconnected style. Only one author whom I have known personally was a complete master of his mind in this respect and that was the revered Dr. S. Weir Mitchell. I visited him one morning in Bar Harbor, Maine, where he was constantly distracted by telephone or telegraph messages and by callers. When I was ushered into his study, he was so deep in his written page that he did not see me at all until he chanced to glance up and discover me. He then laid down his work right in the middle of a sentence, and when I commented upon the distraction he said that he had so accustomed himself to that sort of thing that he never lost the thread of thought, but could take it up again at any moment. This seemed remarkable to me, but I am sure he was quite truthful about it.

A boy gets his first taste of literature about the age of thirteen or fourteen, or at the beginning of his High School period. It is then that Robinson Crusoe and Long John Silver become actual living creatures who move across the stage of his mind as real human beings. Then come other books of adventure in quick succession until it seems that his youthful mind will break under the strain of trying to read whole libraries.

(*To be continued*)

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VOL. 159, NO. 1 JANUARY 1946 WHOLE NO. 2756

A NEW CONCEPTION OF DIAPHRAGMATIC HERNIA

WILLIAM LINTZ, M.D.
Brooklyn, N.Y.

In diaphragmatic hernia, often the pathological findings on autopsy do not explain the symptoms the patient complained of during life. This is due to our misconception of the subject. To revise our conception so that the pathological findings do explain the symptoms is our problem. It is particularly apt to consider such a revision at this time, for diaphragmatic hernia is bound to occur in increasing frequency during the war.

That many conditions outside of the heart will simulate coronary disease is well known (1, 2). That diaphragmatic hernia will simulate this disease is also well known, though seldom thought of (3). That diaphragmatic hernia usually gives rise to symptoms mainly in the digestive tract, and to a lesser extent in the cardiovascular and respiratory tracts, helps to lead to a correct diagnosis. But when a diaphragmatic hernia yields symptoms exclusively in the cardiovascular tract, in the presence of cardiac murmurs and an electrocardiogram suggestive of coronary disease, then it is exceedingly misleading and difficult to make the correct diagnosis. About this subject I want to speak, because it is of vital concern to everyone of us, irrespective of the branch of medicine we practice.

The conclusions expressed on this subject have been derived as the result of a wide experience in the hospital and private practice. The phase of the subject I wish to discuss is best illustrated by the following case.

Case Report

The patient, G. B., white, male, aged thirty-nine, had complained off and on for the last five years of precordial pain. He stated that for the past two months this pain had been exceedingly sharp and radiated to the left shoulder and arm. The pain was more or less constant, and was not influenced by exertion, emotion, meals, rest, or position. He had no dyspnea, cyanosis, or cough at this time, but had had occasional palpitation. He had no digestive disturbances whatsoever. He ate heartily of everything and took two to three bottles of beer with his main meal. On persistent interrogation for digestive disorders, he pointed to the umbilical region and said that very, very seldom he felt "gas" there. He smoked one or two cigars daily, and drank an occasional highball, without any ill effects. For two months he had had lower backache. Aspirin did not relieve his pain. He had no swelling of the feet.

The patient was a foreman in a warehouse and at times performed heavy work. Previously to this he had worked three years for a milk company where he continuously lifted one hundred pound cases of milk all day long, apparently without ill effects.

Previous history.—In 1933 he had an automobile accident in which he suffered fractures of the skull and of the upper and lower jaw. Before this he had never been sick, and therefore, had never consulted a doctor. He never suffered from rheumatism. His family history showed that his mother died of old age and his father of rheumatism. He had five brothers and one sister who were living and well. One sister suffered from heart disease.

Physical examination.—June 29, 1942: The patient was a well built, strong man, height sixty-nine and one-half inches, and weighing 173 pounds; pulse 72, and of good quality; temperature normal. There were no pulsations of the veins of the neck and no cyanosis at this time, though upon later examination (February 6, 1943), a slight cyanosis of the lips and a prominence of the veins of the neck were noted. No veins were visible over the chest or abdomen. There was no swelling of the feet. There were no bulges nor abnormalities in the abdomen or chest, or in the width of the ribs on either side (Figs. 1 and 2).

Heart.—The apex beat was not visible or palpable. Dullness extended five inches to the right of the midsternal line, and on the left the dullness merged with a dullness present in the left chest. Loud, blowing systolic murmurs that radiated in all directions were heard over all of the heart and chest. There was no increase in the aortic dullness. There was marked accentuation of the second pulmonic.

Lungs.—Tactile fremitus was absent over the left lower three-quarters of the chest anteriorly and posteriorly. Over the same area there was flatness and absence of breath sounds, but no egophony was present. Exaggerated breathing was heard over the entire right lung; no râles were heard.

Abdomen.—No abnormalities could be discerned on inspection, palpation, and percussion.

Liver.—Smooth, not tender, and enlarged, reaching to the brim of the pelvis below, and above up to the ninth rib.

Spleen.—Enlarged one finger's breadth.

Neurological, skin, ophthalmoscopic, and the remain-

ing special sense organ examinations were negative. Blood pressure was 150/90.

Laboratory data.—Urinalysis, negative; feces, negative. Blood: June 29, 1942: Hemoglobin, 90 percent; color index, 0.9; red blood cells, 4,750,000; white blood cells, 8050; polymorphonuclears, 59 percent; eosinophiles, 4 percent; transitionals and large lymphocytes, 28 percent. Feb. 6, 1943: Hemoglobin, 88 percent; color index, 0.9; red blood cells, 4,490,000; white blood cells, 8000; polymorphonuclears, 60 percent; eosinophiles, 3 percent; transitionals and large lymphocytes, 11 percent; small lymphocytes, 26 percent. Sedimentation rate for the first hour, 4 mm.; for the second hour 7 mm. Wassermann test was plus-minus. This was followed by a provocative Wassermann, and the examination of four consecutive specimens, all of which were negative.

Fig. 1 Fig. 2

FIG. 1.—Photograph of patient showing no bulging of intercostal spaces.
FIG. 2.—Photograph of patient showing no bulging sides.

Gastric analysis: The macroscopic, microscopic, and chemical examinations were negative. Basal metabolic rate ranged from plus 23 to minus 14. Circulation time from arm to throat was eight seconds. Tests for liver function: The Takata Ara and the galactose tests were negative.

Electrocardiograms were taken on June 29, 1942 (Fig. 3A); on July 7, 1942 (Fig. 3B); and on Oct. 10, 1942 (Fig. 3C).

Roentgenological examination.—Fluoroscopic examination of the thorax showed an irregularity in density and a pattern of gas bubbles in the lower three-quarters of the left thorax. The left lung was aerated and showed limited motion, being compressed in the upper quarter. The heart and its blood vessels, and the trachea, were markedly displaced to the right. The heart's pulsation was strong. The right lung showed compensatory emphysema. The right diaphragmatic cusp was smooth and its motility unimpeded. The left diaphragm appeared stationary.

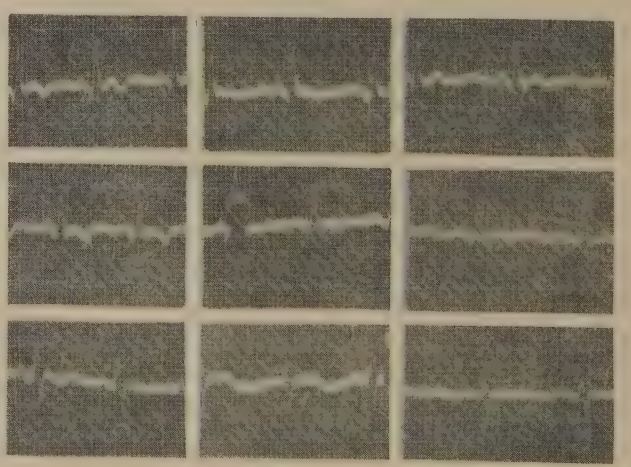
The patient was ordered to fast, and a chest film was made. This showed a normally developed costal cage without evidence of gross deformity or other osseous pathology. The right lung and diaphragm were clearly made out. The left lung was displaced upward above the second rib. The left diaphragm was obscured by chronic, dense, basal adhesions and pleural thickening of long standing. A large gas bubble, suggestive of the stomach, was seen in the thorax at the level of the tenth and eleventh ribs.

No enlargement of the heart was evident. The extension of the vascular shadow to the right was considered secondary to the rotation of the heart by left basal adhesions. The heart and trachea appeared centrally located.

Roentgenological examination of the gastrointestinal tract showed a normal esophagus that was free of spasm and stricture and which was not distorted or displaced. The esophagus entered the stomach two inches below the diaphragm.

The stomach was large, periform shaped, and extended with its base upward through the left diaphragm from the last rib to within one inch of the left clavicle. The conglomeration of stomach, intestines, omentum, etc., prevented clear delineation of the stomach (Fig. 4).

Three hours after a barium meal, the stomach, numerous loops of small intestine, and segments of the colon were present in an almost indistinguishable mass in the left thorax (Fig. 4A). Five hours after the barium meal the stomach was empty. The meal remained in loops of small intestine and portions of the transverse colon in the left thorax. Twenty-four hours later the meal was in the cecum, ascending and transverse colon. The cecum and a short ascending colon were in the abdomen. The transverse colon extended from the right pelvic brim through the diaphragmatic opening to the splenic flexure at the level of the fifth rib in the left chest; descending colon appeared normal (Fig. 5).



A B C

FIG. 3.—Electrocardiograms of patient taken in sitting position.
A. 1. Regular sinus rhythm—rate 93; 2. P. R. interval 0.14 secs.; 3. QRS. duration 0.09 secs.; 4. Broad Q^1 present; 5. ST^1 convex upward; 6. T^1 and T^2 inverted; 7. T^3 diphasic.
Tracing indicates myocardial damage and suggests possibility of anterior wall of cardiac infarction without being characteristic of it.
B. 1. Regular sinus rhythm; 2. Rate 86.
Compared with (A) the following changes have occurred: ST^3 segment is now elevated. T^1 and T^2 less deeply inverted.
C. Compared with (A) and (B) T^1 is now upright. ST^3 segment compared with (B) is now no longer elevated.

When the stomach was filled the heart was seen displaced four inches to the right of the sternum. The right diaphragm was seen at the level of the 11th rib. The left diaphragm was not seen. The trachea was markedly displaced to the right. A greatly enlarged,

FIG. 4A.—Roentgenogram taken immediately after barium meal.

FIG. 4B.—Roentgenogram taken three hours after barium meal.

FIG. 5.—Roentgenogram taken twenty-four hours after barium meal.

smooth liver extended downward to the pelvic brim. The spleen was enlarged to twice its normal size. The spinal vertebrae and all other bones visualized were normal.

Surgical consultants advised operation since, if the hernia became incarcerated, the operative mortality is sixty-six percent.

The treatment in the case herewith presented was exceedingly simple and decisive. The result corroborated part of the pathogenesis of the cardiac symptoms. When placed on this treatment, the patient immediately became free from all symptoms and has remained so thus far. (Three and a half years.)

It was demonstrated, by administering four hundred cc. of carbonated water on a fasting stomach, that the patient's complaints were caused by strain on his heart, as a result of compression of his left lung, deviation of the mediastinal contents, increased venous pressure, and the abdominal viscera in his chest, thus raising the intrathoracic pressure. For this reason all beer and other fluids with his meals were excluded. His meals were divided into half the quantity and he now eats six times a day. The food is low in residue but high in calories. Constipation and distention are guarded against.

When last seen, December 20, 1945, the patient looked and felt well, and was without complaints of any sort. Loud, blowing systolic murmurs were heard over the heart and chest. Veins of the neck were prominent and there were marked pulsations of the carotid on the right side, though not on the left. The lips were slightly cyanosed, but the hands were not. The liver was palapable three fingers' breadth below the ribs. The patient weighed 167 pounds. He worked in the warehouse every day. Only should complications occur will surgical intervention be instituted.

Discussion

In the presence of severe precordial pain, radiating to the left shoulder and the left arm, heart murmurs and an electrocardiograph suggestive of coronary pathology, and in the absence of any other complaints, the most natural diagnosis was that of coronary disease, for which he had been treated over a long period of time. In spite of the exceedingly marked deranged location of the stomach and the intestines there was complete absence of digestive disturbances; and notwithstanding the practically complete functional elimination of the left lung at times, there was no respiratory embarrassment. Yet the history did not quite corroborate the diagnosis and the chest findings were somewhat bizarre. Exertion and emotion had no influence on the pain as they do in coronary disease.

It is precisely in this type of case, as well as in those obscure upper abdominal digestive disturbances with bizarre chest findings, that one has to consider diaphragmatic hernia. When in addition, as in this patient, there is a previous history of strain, or accident, particularly automobile accident, where in a sitting position more pressure is exerted in the upper than in the lower part of the abdomen, then the consideration of the presence of diaphragmatic hernia becomes most essential. I believe the heart murmurs, on account of their character, the absence of an etiological factor, their nonprogressive nature, and the splendid condition of the patient, are functional rather than organic. Perhaps they are caused by rotation of the heart. Nothing on this phase of the subject has been found in the literature.

Without roentgenological examination these cases are almost impossible to diagnose. Only one case out of fifty-three was diagnosed clinically, without roentgenograms. Up to 1923 only forty-seven cases were diagnosed during the life of the patient (18). Between 1900 and 1925 only thirty cases were recognized at the Mayo Clinic, whereas from 1925-1933, 147 cases were diagnosed—five times as many cases in eight years as in the previous 24 (5). The most frequent complaint has been belching and epigastric distress aggravated, when, after meals, the recumbent position is assumed (6).

Routine roentgenograms of the chest commonly fail to diagnose this condition, due to lack of symptoms,

and to shadows on plain films which lend themselves to other interpretations, such as pleurisy with effusion, thickened pleura, pleuritic adhesions, bands, pleuritic encysted fluid, pulmonary abscess, eventration of the diaphragm (7), hydropneumothorax, subdiaphragmatic abscess, esophageal diverticula, atelectasis, etc. Upon examination by different doctors, different diagnoses are made, depending upon whether the hernia is in the chest or has slipped back into the abdomen. On many occasions, even after routine roentgenological examination, only after obtaining gastric contents, such as milk, etc., which the patient ingested prior to thoracentesis, was pleurisy with effusion excluded. The fluid is movable, and a definite fluid level is obtained when the stomach is in the chest. A contrast meal is absolutely essential.

Technic of Examination

After the administration of barium, the patient, in the Trendelenburg position, takes a full breath and holds it while the exposure is being made. Then with the patient supine and rotated into the left oblique position the fundus portion of the stomach will be seen to pass above the diaphragm. Shortly after this the esophagus will fill. The column of fluid is three to five inches high, and the esophagus seems a trifle enlarged. Occasionally the right oblique supine or prone position gives better results.

From a phylogenetic point of view weakness occurs in the diaphragm. The diaphragm may be completely absent or only its muscles, when a thin membrane takes its place. More frequently, at the fusion points of its different components, defects arise. It is through these weak spots, as well as through the enlarged natural openings through the diaphragm, particularly the esophagus, that herniation takes place. This may be congenital or acquired. When a blow is sustained in the sitting posture, directed upward, the increased abdominal pressure, in conjunction with the thoracic suction action, is conducive to herniation in the above mentioned patients. The stage is set for this condition in practically every automobile accident. Yet from a legal point it is well to remember that the Supreme Court of New York State takes the view that a diaphragmatic hernia is congenital unless proved otherwise, since its duration and the onset of symptoms do not coincide. In every obscure case wherein the symptoms are referable to the upper abdomen and chest, with the history of a violent blow or of an automobile accident, diaphragmatic hernia should be considered. The physical findings are often pronounced, but may be odd or perplexing. Of course, it will depend upon what is present in the hernia at the time of examination, such as viscera containing gas, fluid, or solid organs. With the exception of the rectum and vagina, every organ has been found in the chest, although no chest organ has ever been found in the abdomen (8). Therefore, it may be well to consider that a pyelography might be of assistance when a contrast meal fails you. A hernia may develop months or years after the trauma.

The diaphragm is not essential to life. Animals below the mammalia have no diaphragm. I have performed autopsies on over one thousand dogs for various purposes. It is not at all surprising to find in these animals that half a diaphragm is missing. The same infrequency occurs in the human being. During the last war two soldiers fought in the trenches and got along very well with the absence of half their diaphragms (9). Some have gastric distress all their lives. Diaphragmatic hernia has been found to occur slightly more frequently in females, hypersthenic individuals, and persons fifty-five years of age.

The most common diagnoses made are stomach ulcer, gallbladder disease, pleurisy with effusion, neuroses (10) and heart disease (11). A diagnosis of heart disease was considered by Jones (12) in twenty-four cases out of fifty private patients suffering from diaphragmatic hernia, but finally was accepted as tenable in only thirteen cases, after adequate evaluation of physical signs and electrocardiographic findings.

The discomfort is supposed not to depend on the size of the hernia, but on its adherence to or blockage of the esophagus. From operation and postmortem examination, I find that the mechanical handicap to the stomach as the result of herniation is not so great as might reasonably have been expected. Ulcer and erosion of the mucous membrane may occur occasionally. But, presumably, in the great majority of these cases nothing more than simple congestion of the mucous membrane and enlargement of the veins of the walls of the stomach will be found. In these cases, the symptoms depended upon the increased intrathoracic pressure produced.

Experimental Studies

Our present conception of diaphragmatic hernia frequently does not account, on autopsy, for the patient's symptoms because our conception is wrong.

In 1932, von Bergman (13) thought that the cardiac symptoms associated with diaphragmatic hernia were due to the "gastrocardiac complex", that is, due to pressure on the vagus nerve with consequent reflex diminution of the coronary circulation. The vagus nerve in man is comparatively "inexcitable to mechanical stimulation" (14).

According to Jones (15), irritation of the diaphragmatic hiatus and consequent irritation of the phrenic nerve are responsible for the shoulder and cardiac pain and its distribution. This would result in cough and hiccough, which none of his patients had.

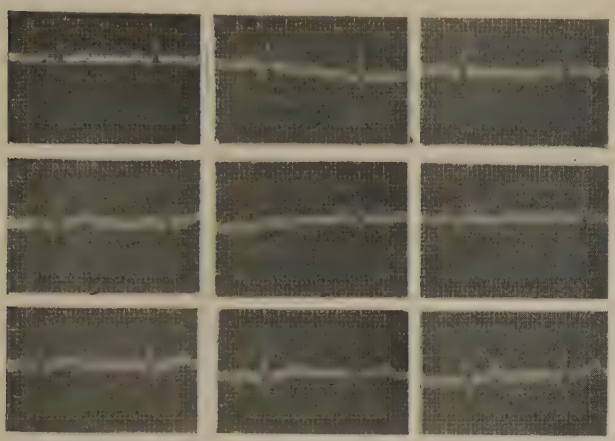
The roentgenological nature of the case reported here is such that it is impossible to conceive how the distended stomach could possibly exert more pressure on the vagus, sympathetic, or phrenic nerve. Besides, this conception does not account for the inverted T waves found in the following electrocardiograms.

On a fasting stomach, 400 cc. of seltzer, at room temperature were administered, having previously taken an electrocardiogram (Fig. 6A). Immediately after this seltzer ingestion another electrocardiogram (Fig. 6B) was taken. One half hour later a third electrocardiogram (Fig. 6C) was taken. The cardiac strain due to the increased intrathoracic pressure and cutailment of the pulmonary area can readily be seen by the inversion of the T-waves after the stomach was distended in the thorax.

Two and one half months later the experiment was repeated using Seidlitz powders and taking an electrocardiogram (Fig. 7A) before their administration, and a second one (Fig. 7B) afterwards. It was interesting to note that gas bubbles were distinctly heard going through the opening from the epigastrium into the thorax. The patient himself felt and heard the bub-

bling. (For this reason it is suggested that this method be utilized in the diagnosis of diaphragmatic hernia.) His lips were cyanosed and the veins of the neck markedly distended. Cyanosis of the lips varies, sometimes being present and sometimes absent. Prominence of the veins of the neck likewise varies. These variations occur as the venous flow to the chest is alternately hindered or facilitated. Here again, following distention of the stomach within the thorax and reduction of the thoracic space, the inversion of the T-wave occurs.

The additional organs occupying the thoracic space lead to increased thoracic pressure. The lung is collapsed and there is a compensatory emphysema of the



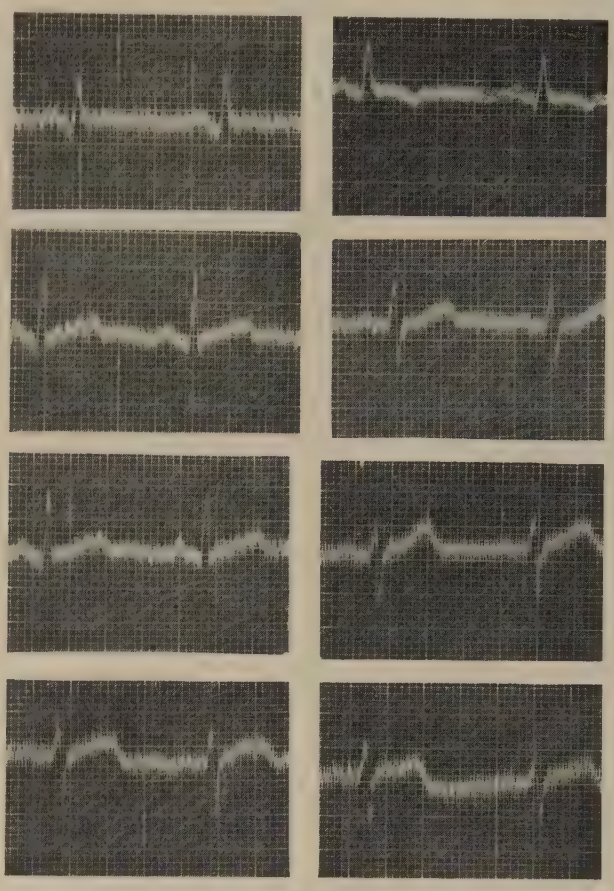
A B C

FIG. 6.—Electrocardiogram taken in recumbent position.
A. Compared with Figure 3A, T^1 is now iso-electric T^2 and T^3 are upright.
B. Compared with Fig. 4A, T^1 is slightly inverted.
C. T^1 is more deeply inverted and T^3 is of lower amplitude.

opposite side. A consequent strain on the right heart develops, as it must pump not only against the increased thoracic pressure but through the collapsed lung and its blood vessels as well. All this results in a diminished amount of blood received by the left heart, auricle and ventricle. Filling of the coronaries depends upon the left ventricle which is only partially filled. Therefore, the coronaries are inadequately filled and the left heart suffers. This explains why, on autopsy, in spite of coronary symptoms, no thrombus is found in coronary veins. This is the way, together with the cardiac strain, the coronary syndrome and other cardiac symptoms referable not only to the right heart but to the left heart occurs. The presence of coronary symptoms including precordial pains was due to coronary insufficiency arising from a greatly diminished volume of blood delivered to the left ventricle through the obstructed pulmonary circulation.

This is well illustrated in the experiment of our patient. On a fasting stomach, after a good night's rest, and in good condition, the patient's venous pressure was 5.5 cm. (Our experience with this instrument shows the normal to be 2-4 cm.) A Seidlitz powder was then administered, and half a minute later the venous pressure almost doubled itself to 9.7 cm., because of the retardation of the venous blood to the right auricle which was caused by the increased intrathoracic pressure as the stomach was distended in the chest. This, of course, would produce a universal increase of the venous pressure.

Before the administration of the Seidlitz powder the blood pressure was 140/85 (stabilized). One minute after the powder was given, the blood pressure was 130/90 (stabilized), proving that the right heart was embarrassed and the amount of blood reaching the left heart was diminished, thereby diminishing in turn its output so that the blood pressure was lowered.



A B

FIG. 7.—Electrocardiograms taken in recumbent position.
A. Identical with Fig. 4A.
B. Compared with 5A T^1 is again inverted T^2 and T^3 are of higher amplitude.

Normally, during inspiration the diminution of pressure in the thorax around the aortic arch results in its expansion; in consequence the pressure of blood within it, i.e., the arterial tension tends to diminish. We obtained the same result with increased thoracic pressure (16). It must have been the resultant of cardiac strain and diminished cardiac output.

Table 1: Distribution of Cardiac Symptoms

Symptoms	Small Herniæ		Large Herniæ	
	Hospital	Private	Hospital	Private
Substernal pain	9	25	4	1
Shoulder pain	16	8	8	1
Arm or hand pain	2	6	3	1
Palpitation	4	2	3	1
Dyspnea	7	2	10	2
Cough	0	0	0	0

In this experiment the coronary flow was of course diminished since it is dependent upon the output of the left heart. The patient, however, did not have any cardiac symptoms. Everyday one sees inadequacy of the coronary flow without symptoms, and for this there are various explanations. In this instance I believe it is a matter of degree of impediment, pressure, and other factors.

Normally, the venous blood returns to the heart by the actions of the muscles; by the suction action of the thorax during inspiration; and by increased abdominal pressure. As the diaphragm descends, the intraabdominal pressure is increased and the blood squeezed out of the splanchnic veins and the inferior vena cava into the right auricle. Gravity aids in the venous return from the superior vena cava.

This explains the cardiac symptoms in large herniæ. But what of cardiac symptoms in the small hernia wherein the intraabdominal content of the thorax is absent or negligible, and cannot possible play by itself the rôle of increasing the thoracic pressure. Yet Jones has shown that cardiac symptoms are present almost as frequently in small herniæ as in the large one (Table 1).

Diaphragmatic Opening

Here another important factor enters into play, and that is the hole in the diaphragm. A hole in the diaphragm tends to disrupt the entire relationship between the negative chest pressure and the positive abdominal pressure.

(To be continued)

THE MANAGEMENT OF GENITOURINARY INFECTIONS AND ESSENTIAL HYPERTENSION*

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The present report concerns the development of a chemotherapeutic agent for the management of cystitis, pyelitis, pyelonephritis, and essential hypertension. It is based on eighteen years of investigation, fourteen of which were spent in actual laboratory and clinical work. The results of the therapy have been observed in two thousand five hundred cases of genitourinary tract infection, including three hundred and fifty of hypertension. More than one hundred thousand specimens of urine have been examined.

The findings presented here are the outgrowth of a desire to correct diseases of the genitourinary tract without the aid of cystoscopy. My interest was first aroused in medical school when the class observed a cystoscopic examination in a case of pyelitis. The patient, a woman of twenty-two, obviously suffered great pain both during the examination and for several days afterwards. Later, during my internship, I observed similar results from the use of the cystoscope.

It was evident that the pain resulted from a disturbance of the already inflamed nerve endings, and I was convinced that there must be some way of treating these patients without making this painful examination. In pyelitis, for example, where the genitourinary tract is inflamed, the hard rubber catheter has a tendency to injure the mucous membrane, thus subjecting it to an inflammation which previously did not exist. This can be verified from the symptoms that these patients develop—fever, headache, backache, nausea, and vomiting.

Pioneer Work in Methenamine and Hydrochloric Acid

From a study of the work done by pioneers in this field, I have been impressed by two well-known facts: that methenamine, also known as urotropin, and hydrochloric acid are present in the body and are discharged in the kidney excretion. The amount of these substances in the system varies according to the condition of the patient. Both are used widely in medical practice, although the enthusiasm for their use is by no means unanimous.

Methenamine.—This substance is a white, odorless, crystalline powder, which has an alkaline reaction in solution. It has long been used as a urinary antiseptic. In 1924 Blanc (1) reported on the value of methenamine in certain types of kidney inflammation but cautioned against its use if tuberculosis were suspected. The next year Batunin (2) made a report on the intravenous use of this drug in acute cases of cystitis, and Brunner (3) found it to be a nondangerous agent for the control of postoperative urinary retention and its sequelae. In 1923 de Takats (4) stated that he used methenamine intravenously before every operation on the urinary tract. More recently, Bhattacharyya (5) advocated the intravenous use of methenamine in influenza and nephritis and Cabanie (6) advised large intravenous doses of the drug partially combined with a small amount of camphoric acid in his urologic service.

Hydrochloric acid.—In 1928 Burr Ferguson (7) first reported on the intravenous use of hydrochloric acid as an agent for the control of the white cells in the treatment of various infections. Many workers have since then confirmed his findings. Hydrochloric acid was called "a great emergency therapeutic agent" by de Beszedits (8) for the treatment of pneumonia malaria, elephantiasis, leprosy, etc. Brymer (9) reported observations covering two years in which he had given one thousand injections. Shropshire (10) called attention to the fact that he had observed no reactions from its use. The action of hydrochloric acid was explained by Verdier (11) as follows: "Many drugs will stimulate the production of white cells, but only hydrochloric acid will reinforce the cell activity, for it has now been demonstrated that HCl is a component part of the white cell and herein may lie the solution to our theories of immunity, for it can be conceived that a ready leukocyte response tells the difference between infection and the escape therefrom."

Etiology

This discussion will return later to a consideration of hydrochloric acid and methenamine, but for the moment I wish to digress while the causes of cystitis, pyelitis, pyelonephritis, and essential hypertension are reviewed.

A thorough study of causative factors was made recently by Munger (12). I fully agree with his observation that the colon bacilli family is a prolific source

*Read before Saskatoon City Hospital staff, Saskatoon, Saskatchewan, Canada, July 10, 1945.

of kidney infection, accounting for about fifty-five percent of urinary infections. In women the route of contamination is short, due to proximity of the rectum to the vagina. In both men and women, however, the colon group may invade the kidneys and the bowels. Munger also believes that among the coccal groups, about fifteen percent are represented by the staphylococcus family—usually the Staphylococcus albus. These "find their way to the kidney by way of the blood stream, and here the diminutive end arteries arrest bacterial emboli."

The staphylococcus organisms, says Munger, usually come from the skin surface, "while the streptococcus family finds its way to the kidneys from the tonsils, sinuses, gallbladder and teeth areas. From the prostate gland and the cervix, both staphylococcus and streptococcus are dispersed."

Infections in these remote areas contribute to accumulations within the kidneys. These accumulations normally lie dormant, awaiting a time when bodily resistance of their host is low. At a moment of weakness, induced perhaps by a severe cold, overwork, or digestive disorders, the bacteria strike in force, when a condition develops similar to that presented by the young woman previously referred to as a case of cystoscopy.

Causes of hypertension.—Those cases of hypertension that are due to kidney impairment have been of particular interest to me. One of the three causes of hypertension listed by Page (13) is renal hypertension. The kidneys appear to be chiefly responsible, says Page, for the hypertension that occurs during glomerulonephritis, acute or chronic, or even pyelonephritis. According to Craig (14), who makes a slightly different grouping, "secondary hypertension results from such lesions as pyelonephritis, glomerulonephritis, hydronephrosis." Ernstine (15) also lists glomerulonephritis as a cause of hypertension and says that "the pressure usually returns to normal as the evidence of active nephritis subsides." In the opinion of Dennig (16), the connection between renal pathology and blood pressure is obscure, but the mutual relations are exceedingly great. "Diseases of the kidney," he says, "may produce elevation of blood pressure, and conversely, a primary elevation of the blood pressure may lead to a lesion of the kidney. Finally, one and the same noxa may influence the kidney and the blood pressure."

Discussing the surgical treatment of essential hypertension, Robbins (17) expresses the view that "the improvement that occurs from the operation, in all probability is, apart from the effect of the enforced rest, due to the improvement of the circulation through the kidneys and not to any effect on the rest of the vasomotor apparatus of the abdomen." An interesting paper by Ockerblad (18) appeared recently in which he discusses cases of unilateral kidney diseases and hypertension, in which hypertension was cured by the removal of the diseased kidney.

In searching for causative factors of hypertension, I have been helped more by the work of Goldblatt (19) and associates than by any other research specialists. In dissection of human kidneys removed in autopsies, Goldblatt found extensive damage to minute arteries in specimens of the organ from hypertensive cases. He concluded that hypertension and kidney damage are linked inseparably—a finding which I have confirmed repeatedly in clinical observation and in experimentation upon animals. It appears that Goldblatt has come nearer the correct interpretation of hypertension than has any other investigator.

This approach, necessary and valuable though it is, emphasizes the effect rather than the cause, excepting that it traces the causative factors to the kidneys. It leaves unanswered the question of what causes kidney damage, impairment or obstruction, and how the cause can be removed. Other findings of Goldblatt's directed my attention to a theory, which may or may not be new. He demonstrated that hypertension can be produced artificially in animals by blocking the blood supply to the kidneys. And it is noteworthy that there was no significant rise of the systolic pressure when large arteries in other parts of the body were constricted.

It seems logical to deduce, then, that any obstruction to the free and normal flow of blood through the kidneys will cause hypertension. This obstruction might be Goldblatt's arterial clamp, or it might be an accumulation of bacteria within the uriniferous tubules, which would have the effect of damming the stream. It seems reasonable that such accumulations would tend to strangle the minute arteries in the kidneys.

What causes these accumulations and how can they be removed or prevented? and if not prevented, how can they be removed?

Experiments with the Centrifuge and with Chemotherapy

Early in my efforts to find a means of treating kidney infections which would make the use of the cystoscope unnecessary, I began to experiment with various combinations of hydrochloric acid and methenamine given intravenously. The purpose, of course, was to find a therapeutic bactericidal agent with the least irritability to the genitourinary tract. However, before discussing this work, certain observations with the centrifuge should be considered.

After several years of laboratory and clinical observation I undertook a study of the centrifuge. This device, of course, reveals many things that we would not otherwise know about human excreta. Although what we do know is valuable in the diagnosis of certain diseases, I feel that the knowledge we possess about urinalysis is very limited. Too many specimens are poured down the sink. The urine is undoubtedly an index of bodily metabolism. Since the tissues are bathed, so to speak, with fluids, which are finally eliminated through the urine, we should certainly be able to find in the urine other things than albumin, sugar, and indican.

In experimenting with the centrifuge, I discovered new sedimentations that are not brought out by regular tests, and which provided clues as to what was going on in the body. For a number of years every specimen of urine was studied in the following manner: After centrifuging a specimen and pouring off the liquid, I filled a blood pipet with the urinary sedimentations and counted the casts—hyalin, bacterial, granular, etc. By this means rather accurate information was obtained as to the condition of the kidneys. Later in my practice, however, I found that it was unnecessary to count the urinary sedimentations in every case because the therapeutic agent developed acts quickly on the existing infection—by this I mean an infection that delays the function of the kidneys to filter poisons.

After considerable experimentation I found that the ideal operating speed of the centrifuge is 2,500 revolutions a minute. Any faster or slower speed will not produce the desired results. Using this finding on urine specimens from cases of cystitis, pyelitis, and pyelonephritis, I found that

1. In cystitis the microscopic field is filled with pus cells.
2. In pyelitis the microscopic field shows, besides pus, bacteria and débris with mottled appearance.
3. In pyelonephritis the field shows hyalin, granular, and bacterial casts.

After determining this, I proceeded to improve the chemotherapeutic agent that would help to clean the kidneys from infection and thus speed the filtering power of the organ.

Methenamine was used in various amounts and concentrations on individuals with genitourinary tract disturbances. It was observed that strongly alkaline solutions of pure methenamine produced sclerosis of veins at the site of injection, while with a neutral solution, given intravenously, a large percentage of patients developed pyuria. Since hydrochloric acid is normally found in the body in dilute proportions, it was combined with the methenamine. In fact, its use to acidify methenamine is preferred to all other agents.

This work was carried on for fourteen years before the solution was finally standardized. During this time various amounts and combinations of methenamine and hydrochloric acid were used.

Standardization Process

Standardization of the solution was done by selecting forty persons—twenty men and twenty women who were near the normal weight of sixty kilos, or 132 pounds. All were suffering from cystitis, pyelitis, or pyelonephritis. Of the twenty men chosen, eight had cystitis, four pyelitis, and eight pyelonephritis. Of the twenty women, ten had cystitis, six pyelitis, and four pyelonephritis.

The dosage determined was the minimum amount of methenamine necessary to produce a bactericidal effect with the least irritation to the genitourinary tract, and with the maximum effect when combined with a relative proportion of dilute hydrochloric acid. This was found to be one-half grain (0.03 Gm.) of methenamine and one-sixtieth grain (0.001 Gm.) of hydrochloric acid U.S.P. per kilo of body weight. This dosage applies also to individuals weighing over sixty kilos. It was used on persons weighing from eighty-five pounds to two hundred forty pounds.

When these two substances are combined in the amounts mentioned in liquid form, they show a pH of 6.5 to 6.7 at the time of mixture.

The solution was administered intravenously to the selected patients three times a week. (It consisted of five cc. of methenamine thirty-one grains, or 0.13 Gm.), combined with ten cc. of dilute hydrochloric acid (0.001 Gm. per cc. or 0.0035 Gm. per ten cc. Special process[1]). Treatments were continued for five weeks.

The majority of the patients so treated responded to fifteen injections. This was later adopted to constitute a course of treatment to correct cystitis, pyelitis, and pyelonephritis. The urine was collected every week for five weeks to determine the influence of the medication of the kidneys. Since the treatments continued for five weeks, the weekly examination of the urine specimens gave a good clue as to what was happening in the kidneys.

Eighty-five percent of the patients who had cystitis, pyelitis, and pyelonephritis selected for the standardization tests responded to one course of treatment. Incidentally, all were working while taking treatment. Ten percent of the patients with pyelonephritis had to take more than one course; the remainder, or five percent, had to be treated for a longer period.

Use of treatment in hypertension.—The use of this therapy in hypertension has interested me particularly because I observed that the large majority of patients who had kidney involvement also carried an elevated blood pressure, and as the solution was administered to these persons the blood pressure dropped.

Another group of ten men and ten women were chosen for the hypertension test. These showed high blood pressure but the urine specimens did not show kidney involvement. Injections were given three times a week and urine specimens were examined each week. After two weeks of treatment, or six injections, the urine specimens showed turbidity and sedimentations consisting of pus, Bacillus coli, casts, shreds, débris, etc. At the time the turbidity appeared, the blood pressure began to drop. After one course of injections the urine again assumed its normal color and the blood pressure was near the normal figure. Response was not one hundred percent.

Case Reports

As mentioned previously, my files cover 2,500 patients who have received the treatment discussed. Their ages ranged from twelve to ninety. These consisted of 1,462 cases of cystitis, 764 of pyelitis, 274 of pyelonephritis, and 350 of hypertension.

Of the 350 patients treated for essential hypertension, 275 were men and 75 women. All had a blood pressure ranging from 284 systolic to 160 diastolic. Of these, eighty percent returned to normal after one course of fifteen injections; a week after they were through with the course, blood pressure was normal in all; thirty days later they were still normal and were discharged as corrected. Twelve percent with high diastolic pressure had to repeat the course before the pressure returned to normal. The remaining eight percent showed a good improvement. Of these, however, two did not fully respond and were advised to drop treatments, although the improvement they received was encouraging, as their blood pressure came down from 282/160 to 160/102 with two courses; in thirty days it came up again to 210/112, and in ninety days it was the same.

At the present time, most of my patients are war workers. At least ninety percent of these are able to work while taking treatments. These are cases of cystitis, pyelitis, pyelonephritis, and hypertension. They require no hospitalization, cystoscopic examinations are not necessary, and there is no loss of time or of income. Patients undergoing such treatments are advised not to use a high protein diet and to abstain from alcoholic beverages.

A review of several typical case histories at this point might be enlightening.

[1]Renalgen

CASE I (Office No. 846).—*Cystitis.* Mrs. B., housewife, aged twenty-four, was first seen Aug. 30, 1943. She complained of backaches, with frequent, painful urination. She had to urinate from five to thirty-five times at night. These symptoms had been present for six months. At the time of examination the red blood cell count was 4,600,000; white cell count, 8,500; hemoglobin, ninety percent. There was no blood stream infection. Urinalysis revealed pus, epithelial cells, and bacteria. This first specimen was milky in appearance, due to the pus, albumin, and bacteria, and had a foul odor. After the first injection of the solution, there was comparatively little nocturia. By the time the patient had completed her course of twenty-one injections (Oct. 5, 1943), no pus cells showed in the urine, which was a light straw color and free from the offensive odor. The pain had entirely disappeared. During the entire course of treatments the patient was able to do her own housework, whereas previously she had had assistance. She spent no time in bed. Her fever dropped the third day and she began to feel better at that stage.

CASE II (Office No. 1764).—*Pyelitis.* Mrs. C., housewife, aged fifty-six, was first seen May 24, 1944. Her health had been fairly good until about six months previously when she suddenly developed backache, and painful, frequent urination—from four to eight times a night. At the time of my examination she had lost thirty-six pounds. The red blood cell count was 3,680,000; white cell count, 6,700; hemoglobin, seventy-two percent. Wassermann and Kline tests were negative. Urinarlysis revealed the following: Albumin, sugar 0, pus, white blood cells, blood, epithelial cells, casts, and bacteria. The first specimen of urine certainly testified to the patient's ailment. It had a strong odor and was milky in appearance. On June 24th, at the end of her course of treatment, the blood count showed a healthy increase: the red cell count was 4,680,000; white cell, 7,500; hemoglobin, eighty-two percent. Urinalysis showed a straw colored urine, with acid reaction; only plus sign was in the epithelial cells.

CASE III (Office No. 512).—*Chronic pyelonephritis.* Mrs. K., housewife, aged thirty-four, was first seen by me on Feb. 18, 1943. The chief complaint was a bladder irritation with frequent, painful urination, which had continued for seven years. She had first suffered from pyelitis, which later developed into pyelonephritis. The diagnosis had been confirmed by a pyelogram. This patient had been subjected to cystoscopic examination once every two or three weeks for seven years. She had consulted leading urologists in California and elsewhere. At the time of my examination, urinalysis showed pus, Bacillus coli, and albumin. Intravenous injections of the hydrochloric acid and methenamine solution were given three times a week. After the sixth injection the suprapubic pain was gone and she felt much better. When one course of fifteen injections was completed, she was free from all pain and other symptoms. Thereafter, one injection a week was given for four weeks, at the end of which time the urine was normal and the patient was discharged. Two years later a letter was received from this patient in which she stated she was still free from all symptoms and was enjoying life for the first time in seven years.

CASE IV (Office No. 642).—*Essential hypertension.* Mrs. G., a widow, aged sixty-two, was first seen March 1, 1943. She had had a thyroidectomy in 1917 and a hysterectomy due to fibrosis, in 1927. Her physician, who said he could do nothing for her, advised her to lead a quiet life and warned her that she might suffer from a stroke. When I first examined this patient her blood pressure was 284/160. Urine was negative to chemical tests and microscopic examination; negative also to sugar and albumin. The basal metabolic rate was -10; red cell count was 3,960,000; white cell count 7,500; hemoglobin seventy-eight percent; anisocytosis and poikilocytosis were present. The first course of fifteen injections reduced her blood pressure to 210/110. She took three courses, at the end of which her blood pressure was 138/90. At this time her blood count showed the following: red blood cells, 4,260,000; white cells 8,200; hemoglobin ninety percent. She went to work and is still working. Her blood pressure is at a nondangerous level.

Physiological Action of the Formula

Experience has proved that, in proper proportion, hydrochloric acid and methenamine administered intravenously, is nontoxic and that the effect of the drug is fourfold:

1. It acts as a kidney stimulant, causing the kidneys to excrete poisonous by-products that accumulate in the body.
2. It neutralizes the out-of-the-way foci of infection and eliminates the infection through the kidneys.
3. It reenforces the white cells thus assisting to combat the infection.
4. It influences the pH of the blood, thus tends to produce a balanced chemistry.

Conclusion and Summary

In proper combination, hydrochloric acid and methenamine constitute a safe product for use in cystitis, pyelitis, and pyelonephritis. It produces no general reaction and no undesirable after-effects. It can be given on a full or an empty stomach. It requires less exposure and is a less painful procedure. It is less expensive. Patients can continue to work while being treated for cystitis, pyelitis, or pyelonephritis. This agent tends to relieve the symptoms of hypertension, and thus prevents stroke.

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3704 FOURTH AVENUE

SOME NEWER CONCEPTS OF HYPERTENSION

A Summary of the Literature

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Definition.—Hypertension may be defined as being "that level at which mortality experience exceeds the predicted average mortality of the population." It has been fairly well demonstrated that levels of blood pressure above 140 systolic and 90 diastolic are definitely abnormal at any age. The actual exceeds the expected average mortality in rapidly rising ratios for systolic or diastolic values above these levels.

By definition, hypertension, or hypertensive vascular disease, is a syndrome in which there is a persistent elevation of the blood pressure and left ventricular enlargement. Nephritis may or may not be a factor and it is generally accepted that complications are varied and frequent.

The term hypertension, according to Maher, is a modern concept, as recent as the blood pressure instrument which was introduced into the United States in 1902 by Harvey Cushing.

Mechanism.—The pathogenesis of arterial hypertension is fairly well established, and the relation of certain types of arterial hypertension to renal ischemia has been demonstrated. Evidence now suggests that humoral agents of renal origin cause hypertension but intense investigation has not succeeded in revealing the true nature of the mechanism operating between renal ischemia and hypertension.

The best available evidence, according to Samuel Prager, indicates that hypertension is due to increased peripheral resistance resulting from arterial constriction and that this constriction is more or less independent of vasomotor control. The chief cause for increased vascular tone producing arteriolar constriction with the development of hypertension is ascribed by some to the circulatory pressor substances elaborated by ischemic kidneys. That is to say, given a condition in which the blood flow through the kidneys is impaired so that there is some degree of renal ischemia, certain hormonal pressor substances raise blood pressure by increasing the tone of the smooth muscle of arterioles, thus increasing peripheral resistance. This arteriolar condition is reversible until such time as organic changes in the vessels take place, when the condition may become largely fixed. Why the condition remains "functional" almost throughout its course in some patients, whereas in others it becomes "organic", is not clear. Several factors are probably involved, producing a variety of probably distinct clinical syndromes.

The present emphasis on the rôle of renal pressor substances in the pathogenesis of hypertension dates from the experiments of H. Goldblatt and his collaborators beginning in 1933.

The Goldblatt experiments.—Goldblatt has demonstrated, and others have confirmed, the fact that a decrease in the flow of blood through the kidneys is regularly followed by the development of hypertension in the systemic arteries. In experimental animals, the application of adjustable clamps upon both renal arteries in such a way as to decrease blood flow through the kidneys is invariably followed by an increasing blood pressure, the degree of which is dependent upon the amount of constriction applied to the clamp. Moderate degrees of hypertension associated with generalized arterial constriction and eventually by cardiac enlargement, follow moderate decreases in the renal blood flow; whereas marked hypertension with arterial necrosis and death from cerebral hemorrhage or renal failure will regularly occur when the compression on the renal arteries is increased and hence, renal blood flow decreases to a minimum. It seems that an enzymatic substance is elaborated in excess in an ischemic kidney. This substance has pressor properties in that, as it circulates through the body, it reacts with other substances to cause diffuse arteriolar constriction, thus producing increased peripheral resistance to blood flow and hypertension. Thus the axiom, "Hypertension is regularly associated with renal ischemia" seems to have been established.

Constitutional component of arterial hypertension.—The "constitutional component" means, according to Schroeder, a defect in certain individuals which predisposes them to arterial hypertension. This defect may be hereditary, or result from early environmental influences. Its obvious clinical manifestations refer to the nervous system, especially to those structures having to do with emotional reactions and their effects upon blood vessels. And the sympathetic nervous system may exert a pronounced effect upon the blood vessels of the kidneys.

Cold-pressor test.—Hines and Brown perform the examination, state Page and Corcoran, by first establishing a basal blood pressure level (important—twenty to sixty minutes at rest), then immersing a hand up to the wrist in ice water for one minute. Blood pressure is measured in the other arm every thirty seconds for the first minute, then every two minutes until the initial level is reached.

People with normal blood pressure could be divided into two groups: first, normal *hypo*reactors, in whom the rise in pressure was less than 20 mm. Hg systolic and 15 mm. diastolic, and second, normal *hyper*reactors, in whom the response was greater than 20/15 mm. Hg. Hypertensives showed much greater rise, the mean being 47 mm. systolic and 34 mm. diastolic. The response in the same individual was quite constant from day to day in Hines' early experience. He is now inclined to admit a wider amplitude of variation and to stress the importance of changes in diastolic pressure in interpretation.

Hines has drawn some important theoretical conclusions from his thinking about this test. They justify the closest consideration, according to Page and Corcoran; at the same time complete acceptance must be withheld until further proof is brought. He considers the cold-pressor test an index of vascular reactivity. Hyperreactivity, in his opinion, is an important etiological factor in essential hypertension. Vascular hyperreactivity may occur as an inherited characteristic of persons who do not have hypertension. As such, it is believed commonly to represent an antecedent or latent

phase of essential hypertension. The mass of data he has gathered leaves little doubt that hyperreactivity and hypertension are frequently associated. The exact degree and nature of the association remain obscure. Until these are elucidated, the use of the test for momentous decisions in an individual normal case is to be discouraged.

If 20/15 is accepted as the normal response, approximately eighty-five percent of persons with normal blood pressure fall into the hyporeactor group. The remaining fifteen percent are hyperreactors and may be expected to develop hypertension.

Classification of Hypertension

Schroeder and Steele divide hypertension into four organic groups: 1. Renal disease: (a) glomerulonephritis, (b) urinary obstruction, (c) polycystic kidneys, (d) pyelonephritis, (e) aberrant arterial supply to the kidney, and (f) Wilms' tumor. 2. Diseases of the nervous system: (a) brain tumors and (b) diseases such as bulbar poliomyelitis. 3. Endocrine diseases: (a) basophilic tumors of the pituitary, (b) adrenal tumors and (c) ovarian tumors, i.e., arrhenoblastoma. 4. Arterial disease, such as generalized arteriosclerosis. A fifth group of unclassified cases probably fall chiefly in groups 2 and 3.

Hypertension cases have been classified for clinical correlation of end-results according to the severity of eyeground changes 1, arteriolar constriction only—with normal renal function; 2, tortuosity and nicking veins at crossings—with normal renal function; 3, marked arteriolar changes, associated with retinitis with hemorrhage or exudate, or both—with impaired renal function; 4, malignant hypertension because of papilledema with hemorrhage and exudate — with marked impaired renal function.

Surgical Treatment

In discussing the surgical treatment of essential hypertension Berwald and Devine state that the rationale for sympathectomy in this condition is predicated on the following results of denervation: 1, relaxation of a large portion of the vascular bed; i.e., blood vessels of the lower extremities and the splanchnic bed; 2, postural fall in blood pressure which always follows sympathectomy but which usually disappears in months or a few years; 3, increased blood supply to the kidneys, and 4, decrease in amount of adrenalin secreted as a result of excitement, fear, and other vasomotor stimuli.

One criterion for operation is age of fifty or under. Age should be calculated physiologically rather than chronologically. Operation should be refused to patients who fail to respond in any measure at all to the sodium amytal and sodium nitrite tests.

The sodium nitrite test consists of giving one-half grain of sodium nitrite every half-hour for six doses and recording the blood pressure every half-hour for five hours. The room is darkened, visitors are barred and nursing care is minimal. The sodium amytal test is similar except that three grains are given every hour for three doses.

Evaluation of these tests in twenty-nine patients showed that if, under the sodium nitrite test, diastolic pressure is reduced 20 mm. Hg or more, the chances are that sixty-four percent of such patients will have a good final result. The lowering of systolic blood pressure by these two drugs is a less accurate criterion of end-results.

Patients with advanced cardiac and renal damage should be refused operation. Obese subjects should lose considerable weight before surgery is attempted. No impressive relationship was observed between sclerosis of retinal vessels and response to sympathectomy in this series.

Sympathectomy by one method or another, states Rosenbluth, has been performed in the last eighteen years in about three thousand cases. Opinions vary widely, however, concerning the effects of different operations on the levels of blood pressure and the course of the disease. From the point of view of the internist, results to date have not been very encouraging and seem to suggest that this radical form of therapy still should be considered in the experimental stage. It would appear that therapy by sympathectomy, preferably by the Smithwick procedure, should be considered strongly in patients with essential hypertension in whom progressive elevation of blood pressure is found after long and careful study or in whom evidence of beginning vascular damage is demonstrated.

Unilateral Nephrectomy

A new approach to treatment of hypertension has been gained as a result of Goldblatt's demonstration (as mentioned above) of the production of hypertension by clamping of the renal arteries, and the publication of several excellent papers pointing out the rôle of pyelonephritis in the pathogenesis of hypertension. Actually, hypertension in unilateral renal disease is less common than generally is thought.

In any case in which unilateral renal disease is suspected and in which nephrectomy is contemplated, it is of utmost importance to appraise carefully the functional status of both kidneys. This is especially true if hypertension exists, for removal of one kidney, if it retains any function at all, will place an increased load on the remaining organ which, if its function is but slightly impaired, will result in relative or functional ischemia of that organ. The net result is no beneficial change in the blood pressure. The following criteria, according to Rosenbluth, for selection of patients with hypertension for whom nephrectomy is indicated should be met carefully if success is likely to be attained: 1, the diseased kidney should be functionless or its function greatly diminished; 2, the opposite kidney should function normally; 3, the hypertension should be of short duration; 4, other factors being equal, the younger the patient, the greater the chances of favorable results following nephrectomy.

Therapy with Thiocyanates

Among the many drugs suggested for lowering tension, the only one that deserves serious consideration is potassium thiocyanate. According to Rosenbluth, the essential facts about this drug in hypertension are as follows: 1, it is the only drug we have that in a considerable number of cases (one-third to one-half) causes drop in tension of more than transient degree; 2, in about an equal number of patients it gives relief of distressing symptoms; 3, it often may cause toxic symptoms and rarely death; 4, it requires careful, close observation and skill in adjusting dosage and determining maintenance level which is effective but not toxic; 5, determination of blood level has been invalu-

able in controlling dosage and preventing severe toxic reactions.

One method is to give one three-grain enteric coated tablet morning and night. If at the end of one week the tension has not been lowered significantly, the dosage is increased to three such tablets daily. When symptoms have been relieved and tension lowered to about 160 systolic and 100 diastolic, an attempt is made to maintain this improvement by daily dosage of three to six grains. If no benefit is obtained after six to eight weeks' trial, use of the drug is discontinued. Generally, for office practice, determination of blood thiocyanate level once each week may be considered adequate.

In a recent Queries and Minor Notes in the *J.A.M.A.*, the following summary is given as to the present status of thiocyanate therapy:

The dose of potassium thiocyanate required to keep its concentration in the blood at a safe therapeutic level (five to ten mg. per hundred cubic centimeters) is extremely variable in different patients. Levels of twenty mg. or more are dangerously toxic. It must not be forgotten that the colorimetric method of Barker is none too accurate and that with levels around fifteen mg. per hundred cubic centimeters of blood a toxic concentration may be approached.

Though this drug is usually administered three times a day the blood concentration remains in most instances fairly constant throughout the day in patients receiving appropriate quantities. No correlation has been found to exist between the urinary output of thiocyanate and the daily intake of the drug or the blood concentration. The commoner symptoms of thiocyanate intoxication, in their usual order of appearance, are muscular weakness, papular dermatitis, nausea, vomiting, mild fever, mental confusion and disorientation, aphasia, convulsions and coma. Thiocyanate is a safe vascular depressor substance only if used conservatively and with proper safeguards. The lowest blood concentration that yields satisfactory reduction of the arterial tension should be maintained. The margin between effective therapeutic levels and toxic levels is small.

General measures.—Some general measures which are universally accepted as advisable before specific steps are considered include proper rest, frequent vacations and the acquiring of a calm, philosophical outlook on life; reduction of body weight in obese patients; moderation in the use of alcohol and coffee and further restriction if they produce abnormal stimulation; restriction or elimination of smoking; sedatives when indicated.

Renal extracts.—The hope of successful therapy with renal extracts has not fully materialized. Page reported their use in twenty-four cases of malignant hypertension and thirteen cases of essential hypertension. In the former, nine patients died, six of uremia and three of cerebral hemorrhage, whereas, none of the cases of essential hypertension resulted in a fatality. The most striking changes following treatment, Page further states, were reversal of eyeground abnormalities with improvement in vision, increase in cardiac output, and decrease in diastolic blood pressure. Unfortunately, because of occasional shock-like reactions, the lack of a uniform product of high potency, and the great difficulty of their preparation, renal extracts cannot at the present time be regarded as a practical form of therapy.

Fish oils.—According to Massie, larges doses of vitamin A have been recommended in the treatment of hypertension, but more careful study has shown that observed reduction in blood pressure was not due to the vitamin A but to some other constituent of the fish oils which are concentrated in commercial preparations of vitamin A. Preliminary studies have shown that fish oils and kidney extracts are surprisingly similar in physical and chemical properties and are almost identical in their effect on blood pressure. Because of high potency and ready availability, fish oils are a more satisfactory source of the active principle effective in hypertension than kidney extracts. Fish oils, therefore, deserve further experimentation and study.

Psychotherapy.—Those who have been stressing the psychoneurotic aspect of the disease believe that in some cases the hypertension arises because of suppressed aggression or rage.

Rosenbluth states that much can be accomplished by a friendly understanding and encouraging chat in which the physician explains the natural history of the disease, stressing its long course, directing the attention away from the blood pressure and even pointing out that it may be better not to lower it.

Psychotherapy has a place in the treatment of every case of hypertension. Whether or not it is useful in removing some neurotic mechanism that may be related to the development of hypertension, it can always help the patient to adjust to the limitations imposed by the disease.

Rice Diet

By strict adherence to a diet consisting of rice, fruit or fruit juices and sugar, supplemented by iron and vitamins, the blood pressure of patients with hypertension secondary to acute or chronic glomerulonephritis or hypertensive vascular disease may be lowered. In sixty-four percent of 167 patients the degree of hypertension was reduced, the systolic blood pressure from an average of 200 mm. Hg. to 149 and the diastolic pressure from an average of 122 mm. to 96, after use of the diet for about two months.

The ordinary mixed diet containing substances which lead to increased production of harmful metabolites should be replaced by the rice diet, states Walter Kempner, M.D., of Duke University School of Medicine. Headaches and edema disappear, electrocardiograms revert to normal, heart size decreases and retinopathy clears in many instances.

The rice-fruit-sugar diet of two thousand calories contains twenty grams of protein, five grams of fat, 460 grams of carbohydrate, 0.2 grains of sodium and 0.15 gram of chloride. Five thousand units of vitamin A, one thousand units of vitamin D, five mg. of thiamin chloride, five mg. of riboflavin, twenty-five mg. of niacinamide, two mg. of calcium pantothenate, and 0.6 gram of ferrous sulfate are given daily. All fruits, except dates, avocados, or those to which substances other than sugar have been added are allowed. Vegetable and tomato juices or nuts are forbidden. Small amounts of salt or hydrochloric acid may be necessary if severe hypochloremia, or symptoms of salt deprivation occur.

About three hundred grams, or ten ounces, of any type of rice are used each day, boiled or steamed in

plain water or fruit juices, without salt, milk, or fat. Brown or white sugar may be used ad libitum.

Hospitalization is advisable during the first few weeks of the diet but subsequent bed rest is usually unnecessary and undesirable.

This diet does not cause a depletion of hemoglobin or of plasma proteins even after prolonged use. Concomitant with the low protein intake, nitrogen excretion in the urine falls to below starvation levels and the patients remain in positive nitrogen balance. Reduction of blood cholesterol is the rule.

The failure of the rice diet to relieve signs and symptoms of hypertension in one-third of the cases is presumptive evidence of either irreversible vascular changes or of an extrarenal, presumably neurogenic, etiological factor.

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450 SUTTER STREET

FECAL IMPACTION COMPLICATED BY UNDETECTED MALIGNANCY AND COMA

*Report of a Case**

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The patient was a woman, seventy years of age, the mother of several children. Her family history was negative. There was a previous history of hypertensive vascular disease, long standing constipation, occasional bleeding and loss of weight. She was admitted into the hospital with a complaint of stubborn obstipation lasting two weeks, with distention, colicky pain over the abdomen, tympanites and nausea, and a rapid pulse. There were no points of local tenderness or irregularity, and no abdominal masses could be felt. The blood count was negative, blood pressure 190 over 90. A urinary examination showed traces of albumin and sugar, no acetone or diacetic acid. She became more and more bloated, suffered from dyspnea and dizziness, was dull and stuporous and finally went into a semicomatous state. Barium enema was not retained and an x ray of the colon was unsatisfactory. Pelvic examination was negative. A digital examination disclosed a rounded, hardened mass, the size of a baseball, high up in the rectum, confirmed by sigmoidoscopic examination. This mass slid up out of reach as soon as touched and eluded all attempts to bring it down. Enemata and laxatives were of no avail and lavage of the stomach and intubation with the Miller-Abbott tube were without result. A diagnosis of fecal impaction was made with complicating intestinal obstruction, and an operation was advised, but rejected by the family.

The patient was given repeated high irrigations with a mixture of oxgall, H_2O_2, and olive oil, which finally resulted in the passage of an astonishing number of liquid stools, over twenty in the next twenty-four hours. The abdomen became flat, the mental condition cleared and relief from symptoms was complete. She refused to stay in the hospital, was discharged and advised to return for further study and treatment because of the unsatisfactory x ray examination and a feeling that there might be some hidden pathology because of the loss of weight, chronic constipation, recurrent bleeding and advanced age. Six weeks later a similar episode occurred, and she was taken to the hospital for operation, which disclosed adenocarcinoma of the sigmoid.

Comment

As a rule, in the ordinary case of rectal impaction, all symptoms subside after the obstruction in the rectum has been relieved and regular bowel movements established, but it is necessary, nevertheless, to repeat the sigmoidoscopic examination at this time to determine if the lumen is free of any possible stricture, tumor, foreign body or malignancy at or above the point of obstruction. It is obvious that no barium enema or colon x ray would be practicable or helpful as long as the bowel remained filled with stool; hence this should not be omitted at a later time.

The outstanding features of the case reported here are:

1. The presence of coincidental malignancy, an uncommon finding in the average case of fecal impaction.
2. The complete relief of all symptoms with the reestablishment of bowel function, which gave a false impression of a favorable termination of the trouble.
3. Coma, unusual in fecal impaction except as it may be due to other causes, such as diabetes, hypertension, etc.
4. Temporary relief by repeated colonic irrigations.

545 WEST END AVENUE

*From the service of Dr. Allan Klein, North Hudson Hospital, N. J.

A THERAPEUTIC STUDY OF BRONCHIAL ASTHMA

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At a conservative estimate, between three and four percent of the population is asthmatic (1). Although the ultimate aim of therapy is to discover and remove the cause, this great group of individuals with bronchial asthma comprises a problem that is far-reaching in its relationships and highly complex in its etiologies.

Identification of extrinsic and intrinsic asthmagens almost invariably involves tedious and lengthy procedures that tax ingenuity and patience to the utmost. In numerous instances, identification of the asthmagens may be obscured indefinitely. When identification is achieved, in many cases adequate countermeasures are not available or not practicable.

While efforts are being made to determine the etiology and to find adequate countermeasures, all patients must have drugs for relief and prevention of the asthmatic paroxysms. The number of medications that have been proposed and have received clinical trial in bronchial asthma is legion. Their very variety bespeaks generally unsatisfactory results. No one drug has been effective in all cases.

Of all the drugs extensively tested, only three are of established value: epinephrine, ephedrine and aminophylline (theophylline with ethylenediamine); of these, only ephedrine and aminophylline are effective orally. Epinephrine must be administered hypodermically for good effect, which at best lasts but a few hours.

The purpose of this study[1] was to develop by clinical research a satisfactory formulation for symptomatic relief of the paroxysms of asthma to be used by oral administration. It was immediately recognized that the two most satisfactory drugs for oral use are ephedrine and aminophylline.

On the established principle of synergism, it was decided to study the therapeutic effect of these two drugs used in combination. The action of synergists has been described aptly in Cushny's (2) text as follows: "The presence of another drug having the same effects in the body often increases the action of a remedy to an unexpected extent. This is the ground for the prescription of several remedies acting in the same way." On this principle it was believed that the combined effects of ephedrine and aminophylline might be used in the same prescription to greater advantage.

One problem was to offset the undesired effects of ephedrine, which often causes nervousness and insomnia. On the basis of my previous research on bromides, I was familiar with their effectiveness for relief of these symptoms and also their sedative value in the partial relief of the asthmatic paroxysms. Hence it was logical to assume that sodium bromide might increase the therapeutic effect of the ephedrine-aminophylline combination and at the same time counteract any excessive stimulating action of ephedrine upon the nervous system. Subsequent clinical study proved this to be the case.

[1]This clinical study was aided by a research grant contributed by Charles Raymond & Co., Inc. of New York City.
[2]Available for prescription as parasma tablets.

Ephedrine

Of the drugs that are useful in bronchial asthma, ephedrine is placed first by Rackemann (3) who states: "Ephedrine by mouth is useful. Its action is like that of epinephrine to stimulate sympathetic nerves and overcome bronchoconstriction and consequently to modify the overactivity of mucous glands in the bronchial mucosa." Alexander (4) emphasizes the point: "Its great advantage is that it can be taken by mouth." According to Goodman and Gilman (5): "Ephedrine gives symptomatic relief in bronchial asthma . . . and the drug occupies a well-defined place in the management of asthmatic attacks. Inasmuch as it can be given orally and has a long duration of action, ephedrine can be used to prevent asthma. Mild attacks often yield to ephedrine and the alkaloid may abort seizures when given sufficiently early, or reduce their number and severity when given continuously." Bastedo (6) adds: "It stimulates the respiratory center . . . given by mouth or by any other route, it dilates bronchi constricted as in bronchial asthma. But a dose that in a nonasthmatic regularly raises the blood pressure may relieve an asthmatic without any blood pressure change."

The bulk of authoritative opinion stresses prophylaxis of asthmatic attacks as an important use of ephedrine. This prophylactic value is greatest when prodromal symptoms are manifested consistently.

To sum up the advantages of ephedrine, one of the two principal oral antiasthmatics of established value: 1. It is highly effective by mouth. 2. The duration of its action is greater than that of epinephrine. 3. When given continuously, it frequently prevents attacks. Nevertheless, ephedrine alone is not altogether satisfactory. In a considerable number of cases it overstimulates. Even ordinary dosages may have disagreeably exciting effects. Although effective in most cases, in a certain percentage of patients ephedrine may not sufficiently heighten the tone of the vegetative nervous system and so may not cause the desired depression of the vagus influence. It is not known to provide action so uniquely prolonged as that commonly effected by aminophylline.

Aminophylline (Theophylline with Ethylenediamine)

Aminophylline is the other principal oral antiasthmatic. Extensive, steadily increasing clinical use has demonstrated it to be remarkably effective in many types of bronchial asthma. Greene, Paul and Feller (7) report: "We have used it in several cases of bronchial asthma which were epinephrine fast and we have obtained good results in most of them. Theophylline with ethylenediamine has a favorable action on bronchial obstruction both in bronchial asthma and cardiac failure." Such successes have been repeatedly confirmed. Rackemann (3) states that he has found aminophylline "very useful for patients who no longer respond to epinephrine—who have become epinephrine-fast". He adds that the drug may be expected to bring the patient out of status asthmaticus. Brown and Blan-

ton (8) found that "complete relief" is afforded by the drug in many cases and distinct relief in the majority of other cases.

The extensive clinical experience with aminophylline is thus summed up by Goodman and Gilman (5): "The smooth muscles of the bronchi are also relaxed by the xanthines especially if constricted experimentally by histamine or clinically in asthma. In the treatment of bronchial asthma, theophylline with ethylene diamine has proved of definite value. The drug is of special benefit in patients refractory to epinephrine. A definite increase in vital capacity is associated with the symptomatic relief afforded by the drug. In addition to causing cardiac stimulation, the drug relaxes the bronchial musculature, which may further alleviate dyspnea if there is a superimposed factor of bronchospasm."

The duration of benefit after treatment with aminophylline is of special interest. After aminophylline, free intervals range from hours in some cases to periods as long as eight months. In a small series, Herrmann and Aynesworth (9) noted six cases with free intervals of three to five months. According to Young and Gilbert (10), the action of aminophylline is directly on the bronchial musculature. Of all U.S.P. theophylline preparations, aminophylline possesses the greatest solubility. A disadvantage of aminophylline used singly is that it is not equally effective in all cases, although it provides satisfactory relief in most instances.

Requirements for Optimal Medication in Bronchial Asthma

Certain definite requirements must be met by a medication before it can be regarded as optimal in antiasthmatic therapy, pending full asthmagen identification or as a sustaining measure or for prophylaxis.

1. It must be safe. It is characteristic of bronchial asthma that measures otherwise generally employed to suppress symptoms may here be dangerous and therefore unusable.

2. To avoid drug allergy, all too frequent in bronchial asthma, any formula must be comparatively simple.

3. The optimal medication must be orally effective for the most practical therapy.

4. The medication must possess a wide sphere of action: Its range of effectiveness must extend beyond that of any known single drug. No one drug is effective in all cases. More than one drug must be incorporated in the formula to provide comprehensive action. Thus the great advantage of synergism is obtained, the combined medication proving effective where its components may fail individually.

5. Side-effects, such as central overexcitation, produced by one component must be counteracted by another component. Sedation is in itself a desirable provision for most asthmatics. It becomes indispensable if the most favorable results are to be obtained by the administration of sympathomimetic drugs such as ephedrine, the only orally effective sympathomimetic drug that has been found useful in most types of bronchial asthma.

6. Promptness and duration of action are highly important. If one component affords prompt relief but does not offer prolonged freedom from symptoms, another and longer acting component of the medication is indicated.

Theoretically, then, the optimal medication must incorporate both of the two principal recognized oral antiasthmatics whose safety is beyond question and whose actions overlap: namely, ephedrine and aminophylline. No other drugs so nearly specific in their action in bronchial asthma are available for oral administration. Where one drug fails, the other is generally effective. Also, because of synergism lowered dosages become possible, with a consequent diminution or complete elimination of side-effects. Still, ephedrine even in small doses may be overstimulating. In the theoretically optimal medication, sedation must be provided by a third component. Sodium bromide was selected because of my previous extensive studies with this drug.

A Synergistic Formulation

In the present series of studies, of the various preparations tested clinically because of the possibility that their composition approximated that of the theoretically optimal medication in bronchial asthma and because synergized therapy might result, I found the following formula[2] most satisfactory:

ephedrine hydrochloride	⅛ gr.
aminophylline	1 gr.
sodium bromide	3 gr.
with excipients	

(Suggested dosage: three tablets with water; dosage not to exceed five tablets in three hours or ten tablets per day)

A group of twenty hospital ward patients who had been admitted in asthmatic crisis or who had developed asthmatic attacks while being treated for other unrelated diseases provided the clinical material. The average patient was 37.2 years of age; average height, 63 inches; average weight, 137.4 pounds. The paroxysmal asthmatic attacks occurred as a result of acute or chronic asthma, hay fever and coryza.

Patients were given the tablets by mouth in approximately the recommended dose. The average patient received two and one-half to three tablets per day for three and one-half days. The dose was regulated according to the duration of the effect.

Out of twenty patients taking the tablets, eight had complete relief, ten partial relief, and two no relief. Hence the treatment afforded relief in ninety percent of the cases treated. In only one case were there untoward by-effects: nervousness, palpitation and increase in pulse rate. These results were more satisfactory than those obtained with either ephedrine or aminophylline used singly.

Discussion

The high percentage (ninety percent) of the cases which experienced relief after comparatively small doses of the formulation studied is excellent evidence that the theoretically expected synergism of the three components of the preparation must have been realized. In addition to the expected synergistic actions of ephedrine and aminophylline, sodium bromide affords spasmolytic power not obtainable with either of the other two drugs. This bromide, the least irritating of all bromides, acts also to diminish the cough reflex.

The promptness with which distress was alleviated in so many cases is another impressive indication that synergized therapy is afforded. Perhaps the most impressive finding was the marked relief resulting from low dosage levels, as would be expected from theoretical

considerations of the synergism between ephedrine and aminophylline in bronchial asthma. Obviously their overlapping effects provide an unusually wide sphere of action.

Thus, both theoretically and clinically, this combination of synergistic drugs appears to offer a satisfactory therapeutic approach toward optimal symptomatic medication in bronchial asthma. It is safe. Its pharmacological simplicity reduces the possibility of allergic reactions. It is orally effective. Its action is prompt and comprehensive. Side-effects are at an apparently irreducible minimum.

Summary

A therapeutic study of bronchial asthma showed that satisfactory relief and prevention of the paroxysms may be achieved by oral administration of a combination of ephedrine hydrochloride, aminophylline and sodium bromide. Apparently these active ingredients act synergistically, since the formulation studied is more effective than either ephedrine or aminophylline used singly. The value of the sodium bromide is as a sedative to allay spasm and also to combat the stimulating effects of ephedrine upon the nervous system.

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THE SYPHILITIC BRAIN AND HUMAN DESTINIES

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Strange are the ways of the human brain. It is wholly unpredictable in its action and behavior. It does not necessarily work at its best in a smooth and calm milieu. The irritated brain, the bruised and diseased brain may flair up into a frenzy of creative thought of far-reaching effects. It is interesting to note that a significant stream of history has been borne along on syphilitic brains.

The destinies of England, Russia, Germany and France at the beginnings of their ascent to greatness as nations were under the rule of syphilitic brains. While these were disease-tainted brains, they were also brains that had the germ of greatness in them. They left a profound mark on world history.

The Tudors of England

The fortunes of England during the reigns of Henry VIII and his offspring, Edward VI, Mary and Elizabeth, were for many years in the hands of tainted rulers. Henry himself acquired syphilis; his son and two daughters inherited it from him. Concerning Henry VIII there is ample evidence that he was a syphilitic. The definite degenerative changes, mental, moral and physical which set in his early middle age, his bloated face, the constantly wet and running sores which would not heal, and his death in a stupor at the early age of fifty-five, are all significant indications that Henry VIII was heavily tainted with the luetic virus.

Henry's bloodthirsty way of getting rid of the women he tired of, and his equally cruel ways of dealing with his ministers and advisors, were the promptings of a syphilis-damaged brain. He had acquired the disease at the age of fourteen or fifteen, long before he had married his first wife. The many miscarriages of his six wives, the puny children they bore him and their own poor health (having been infected by him) are still further evidence that Henry harbored a loathsome disease.

The general atmosphere of lust, obscenity, grandiose ideas and violence combined with cowardice is all typical of syphilis. All his dreadful actions had their origin in his disease-maddened brain; he was the embodiment of loathsomeness. Yet Henry VIII was responsible for some important changes in English history. It was he who established the Church of England, promoted commerce, acted as patron to men of science, and encouraged those engaged in literature and the arts. It is true that many men who came in too close contact with Henry lost their lives because of his syphilitic obsessions, yet he started England on its way to greatness.

Henry VIII's immediate successor, Edward VI, was thoroughly tainted with syphilis, a heritage from his father. He had always been frail and sickly, and his life was mercifully short. Similarly his sister, Bloody Mary, was a congenital luetic. All her bloody actions, mostly in the name of religion, were conceived in her disease-troubled brain. She went through life in a trail of blood and suffering. Not only on her brain had syphilis left its mark, but her body also bore its signs. She was shortsighted because of this loathsome disease; her face was wizened, and the constant pain she endured in her bones were all manifestations of the same devitalizing ailment.

Henry's more brilliant daughter, Elizabeth, also inherited his disease, but in spite of it she became one of England's great queens. She was cruel, vindicative and merciless, but she was also a great personality. It was

during her long reign that England began to rise to greatness. It was the golden age in English literature, exploration, military exploits and commercial expansion.

The syphilitic brain is not necessarily a dull one, although it may be a crazy one. In fact, most often it is a dazingly brilliant one. Henry VIII was not a stupid man. He was quite learned and intellectual. So was his daughter Elizabeth. She knew several languages and did quite a good job of translating Boethius's *Consolatio Philosophae*. She knew music and was well acquainted with the literature of her time. It was during her reign that Shakespeare, Jonson and other immortals in English literature flourished. She knew them and encouraged them.

Elizabeth was a woman of violent loves and hates. She caused the deaths of many of her close friends and advisors for trivial reasons, but her interests were always for England. Elizabeth countenanced and abetted explorers and privateers and smugglers and slave-traders in extending her country's maritime power at the expense of Spain. Her reign was notable for laws regulating apprenticeship, prescribing the terms of employment of laborers and other far-reaching social legislation. Under the reign of the Tudors significant changes took place in commerce, industry, justice, finance, religion and the arts.

Elizabeth's private life was a strange one, dominated by the most part by a sick brain. She had many strange episodes and her very person was clothed in mystery. But she was always faithful to her public trust. Her disease-scarred brain ruled England through its most trying years, years that saw England in its ascendency to a place among the world's great nations.

Ivan the Terrible

During the time that the syphilitic Tudors were ruling England, Ivan IV, the first Czar of Russia of the dynasty of Rurik, also terribly tainted with syphilis, was ruling Russia. Ivan IV, better known to history as Ivan the Terrible, whose terribleness had its origin in his disease-maddened brain, was by far the cruelest of the rulers of those times.

Most of his life Ivan had had a cruel streak in him. His fertile mind began early to devise new tortures for his enemies, and quite often for his friends. In his early days he used to watch with delight his huge dogs as they fell upon the prisoners whom he had thrown to them.

Syphilis of the brain is a peculiar condition. Besides causing general paralysis, the disease acts upon the arteries of the brain and the symptoms that it causes seem to depend upon the areas of the brain that the diseased arteries supply. If the affected area is in the front of the brain, which involves the intellectual faculties, all the symptoms are of violent mental irritation. They may begin quite early in the disease and may last for many years till the patient's death. The story of Ivan the Terrible is the story of a man with an Oriental brain, maddened by syphilis, abandoning himself to the most ruthless cruelty. He killed his eldest son (like himself heavily tainted with syphilis) for a fancied insult to his wife.

Though Ivan the Terrible's reign was severe he did much to ameliorate the lot of the poor and to destroy the might of the *boyars* (nobles). In his time the army was reformed, and a new code of laws was given to the nation. Archangel was founded, trade with England was begun through the White Sea, Siberia was conquered and Kazan and Astrakhan were added to the Russian Empire. The greatness of Russia was a vision in Ivan's mind, a vision which Peter the Great translated into reality.

Ivan was a curiously perplexing mixture of courage and cowardice. A religious acetic, he was an implicit believer who lives with God. Like many syphilitic lunatics he imagined himself to be God's annointed. His memory was good, remarkably so, and he knew his Bible well. His conversation could be witty and sparkling, yet when left to his own company he sank into oppressive melancholy. Ivan the Terrible was one of the great Czars of Russia. It was during his reign that Russia started on its way to becoming a great nation, just as England did under the reign of the syphilitic Tudors.

Frederick the Great

It is a curious thing that the great nations of Europe made their start under syphilitic brains. Germany under the strange rule of Frederick the Great also made its start toward greatness. And Frederick the Great also had a syphilitic brain. His entire life was one succession of queer incidents. According to one of his biographers, Norwood Young: "In later years Frederick gave up shaving and merely clipped the end of his beard with scissors. He seldom washed any part of his person even his face and hands. One of his valets concluded from his master's dislike of water that he must be afflicted with a kind of hydrophobia. His complexion was tanned—doubtless because it was seldom washed. It was touched up with red paint. His eyes were prominent and blue-gray."

Frederick could speak three languages, was interested in music and the sciences and he loved the company of great men. But he was more interested in the arts of slaughter and conquest. It was during his reign that the Seven Years' War was fought, and in it he won his reputation as a military genius. It was he who started Germany on the way to conquest and expansion, which under another sick brain reached the heights of folly.

The military victories of Frederick the Great enlarged his empire considerably. His conquests paralleled those of Hitler's. He made the first partition of Poland, but unlike Hitler he was a much better ruler. He was the first to apply scientific methods in the government of his people.

Frederick set about laboriously to make Prussia the best governed state in Europe. He carefully watched the judges to see that they did not take bribes. He commissioned jurists to compile laws and to make them so simple and clear that no one would violate them through ignorance. He abolished the old practice of torturing suspected criminals to make them confess their guilt.

Frederick founded elementary schools so as to abolish illiteracy. He considered the promotion of material prosperity a prime requisite for national greatness. He invited thirty farmers to move in from other countries and to settle in Prussia. He encouraged manufacturing and built canals. Marshes were drained and transformed into rich pasture land. Under his rule Germany began to rise to greatness.

Louis IV of France

It was another syphilitic brain that started France on its way to becoming a world power, the brain of the Sun King—the Grand Monarch—Louis IV. He was only seventeen when he contracted syphilis. He was treated by Dr. Villot with mercury, constant purgation and frequent baths, but this treatment was not completely successful. In time the disease became chronic. It settled in his bones, his heart and his brain.

The personal life of the Sun King was one of utter misery. He was not happy with his wife; he went from one mistress to another. He was frail in health; in monotonous succession he suffered from smallpox, measles and other infectious diseases. Syphilis had so undermined his bones that when his dentist attempted to extract a tooth he broke the monarch's jaw. Louis was thoroughly rotten from within, yet under his tainted brain France enjoyed one of her greatest periods in history.

Louis worked hard and conscientiously. Under his reign France rose to a first-class world-power. French became the language of fashion, as well as of diplomacy. During his time French manners, dress, art, literature and science were adopted as models by all the civilized world. Under him flourished some of the greatest names in French literature: Corneille, Molière, who brought French drama to its greatest heights, Racine, Madame de Sevigne and La Fontaine, the maker of fables.

It was during the reign of the Grand Monarch that French industry and commerce expanded considerably. French naval power rose to among the first in the world. He extended the boundaries of France in all directions, one boundary reaching almost to the Rhine. France was now firmly established as one of the world's great powers.

The syphilitic virus that had become deeply embedded in his brain had made Louis exceedingly vain. He had ideas of grandeur—typical symptoms of a syphilitic brain. He was the grandest monarch in all the world. His vanity had to be appeased by expensive entertainment and show. He built the greatest of all palaces at Versailles. He had the greatest noblemen in France as servants, as valet-de-chambre, as masters of the royal wardrobe. Only a nobleman of the most exalted rank was fit to comb the royal hair or to dry him off after a bath.

The fortunate thing about the ideas of grandeur that spring so readily in syphilitic brains is that those in high places are able to put them into execution. All would be well, if only the benevolent nature of the man behind the ideas guided them along proper channels. However, quite often the syphilitic virus brings out the worst in man.

Mussolini

The history of the world has been deeply influenced by syphilitic brains. It would require a book merely to mention each briefly. In closing this discussion it will be interesting to take a look around and see what a syphilitic brain did in recent world history. That brain was Mussolini's and it played an important rôle in current history.

Benito Mussolini acquired syphilis in his youth and he had had many months' intimate acquaintance with hypodermic syringes and 606. The fact that a man may have been treated with salvarsan and neosalvarsan in the early days of his infection with syphilis is not always a guarantee that his nervous system will be immune to the ravages of the syphilitic germ. That seems to have been Mussolini's case.

Mussolini from the early days of his rule had ideas of grandeur. He made a bust of Cæsar, but for the face of the great Cæsar substituted that of the greater Mussolini. Not long thereafter Benito posed for a photograph in which he appeared in an imitation of Napoleon's uniform, with the Napoleonic gesture of his left hand in his breast pocket.

The luetic brain of Mussolini was full of grandiose ideas. He began to play with a lion to show Italians that he was fearless, but no one suspected that the lion's teeth and claws had been extracted. Two inches were added to his height by the usual subterfuge of high heels and padded soles.

Like Goering's sick brain, Mussolini's was brim full of dreams of uniforms. He liked to strut about in grandiose costumes. One day he was dressed in the uniform of a leader of the Cossacks, the next as a drum major, and the following day he was a grand vizier. He loved high plumed hats and brass buttons and dazzling colors.

Typical of the syphilitic brain, Mussolini considered himself the maker of modern Italy. It was Mussolini who gave Italy back her "self-respect". It was Mussolini who defied the whole world with truculent words and gestures. It was Mussolini who conquered vast Ethiopia and made his King an Emperor. It was Mussolini who stood on balconies and jutted out his jaw and roared that he was not afraid of anybody.

The disastrous showing of Italian military ventures was in great part due to the syphilitic brain at the top. Mussolini's brain was full of grand ideas (as all syphilitic brains are) but he was a bit confused in his thinking. One of the characteristics of the luetic brain is that it is given to compulsive thinking. Mussolini cherished his thoughts as if they were himself. The two are identical and sacred. He was resistive to criticism and reason. He would not listen to his military leaders, for he believed himself to be the greater military genius. He sent them out to conquer, not to give advice.

Mussolini was primarily self-centered and self-seeking. His leadership was autocratic and not cooperative (characteristic of the syphilitic brain in high places). His leadership (he firmly believed) was more important than any cause. That brought him and his people to disaster.

The critical faculty is involved in compulsive thinking. Underlying the whole process is a fear of emotional reality. Mussolini could not face reality when it conflicted with preconceived notions. He had for this reason, sent thousands of young Italians to their death. His grandiose ideas were at the bottom of his nation's misfortunes.

Conclusion

The destinies of mankind have at various times been in the hands of the possessors of syphilitic brains. The main characteristic of the luetic brain in high places is cruelty, vanity and grandeur. The ordinary syphilitic lunatic in an insane asylum is merely a harmless lunatic, but when he becomes the head of a state, things begin to hum. If the tainted brain is an intelligent one the fortunes of the nation improve, but when it is a stupid one, the nation is headed for disaster.

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Editorials

Scarlet Fever

The known history of scarlet fever dates back to 1550 or beyond. Sydenham in 1675 called it *febris scarlatina*. Since the rash is the most obvious sign, it has always received greater emphasis than it deserves. . . The rash or *exanthem* is always secondary to infection in the nose and throat or *enanthem*, and it is merely the appearance of the skin caused by nature's effort to throw off the "poison" or toxins which are generated by the hemolytic streptococcus or one of its close relatives. It took many years for bacteriology to determine all this and to have the facts accepted. We now know that the disease is acquired through contact of a susceptible person with the secretions from the mucous membranes of the nose, throat or ear (abscess) of an infected person. There is, perhaps, some natural immunity, since certain persons have been exposed (nurses and physicians) for months and have never developed symptoms, but usually immunity is acquired through an attack. Happily, it is decreasing in incidence. Osler's *Practice of Medicine*, fifteenth edition, edited by Christian, states that "in the United States the mortality in 1900 was 10.2 and in 1940 0.3 per 100,000." (page 85). This is ascribed to early diagnosis, complete isolation, improved sanitation, and better understanding of management generally. But there probably will always be sporadic cases, even if epidemics be reduced to nearly zero. This is unfortunately true of any contagious disease and is due to human stupidity and willful carelessness.

Now that we have penicillin and the sulfa remedies which are hostile to practically all families of streptococcus, we may be able to shorten the course and reduce the mortality still further. In the *J.A.M.A.*, November 17, 1945, a Boston group headed by Manson Meads, MD., describes some careful studies in the penicillin treatment of scarlet fever. A comparative and fairly parallel estimate is made of sulfadiazine also in this connection. Four groups, A, B, C, and D consisting of nine patients each, were used. In Group A, no sulfonamide or penicillin was used. In Group B the patients received penicillin intramuscularly, and throat cultures became free and remained free of streptococcus hemolyticus in from twenty-four to forty-eight hours. However, the same or an analogous streptococcus often appeared after penicillin was discontinued. This proves that we have here a valuable bacteriostatic agent. It probably does not "kill" the bacteria, but holds them in check until the natural factors of safety in the body can overcome the enemy. The patients in Group C received sulfadiazine. The streptococcus disappeared or recurred intermittently, but new types were found, thus showing a change in family grouping. Group D was given penicillin spray in nose and throat. Nasal cultures became free on the second day or remained free from the pharyngeal strain throughout the treatment period. However, a "new type" appeared in one case at the end of the observation period where nasal cultures had previously remained free from streptococci.

The important observation was made that all strains of beta hemolytic streptococcus were highly sensitive to penicillin. "Laboratory and clinical studies have shown that penicillin is highly effective against the hemolytic streptococcus. It is more active than sulfonamides in protecting mice against lethal infections which resisted sulfonamide therapy but responded well to penicillin. Such observations and the lack of toxicity of penicillin have made it the treatment of choice in severe hemolytic streptococcic infections." Nevertheless, the eruptive and toxic manifestations of scarlet fever in the skin and elsewhere persist and are probably not at all influenced by penicillin. This makes little or no difference to the outcome of this severe malady.

The point has often been made that while the sulfa group of drugs have been useful in gram positive infections, they are not effective against gram negative organisms. Moreover, they possess all the disadvantages of dyes which circulate in the blood stream, and they may be harmful to the kidneys especially. It is extremely fortunate that penicillin is so nocuous to bacteria and so innocuous to human body cells. That is its very great advantage. It is as nearly "fool proof" as any therapeutic agent that has as yet been brought to light.

The New Year

In the past year the world has seen the conclusion of the most destructive war in history. The after-effects of this war will be with us for many a long year and man will suffer in varying degrees depending on where he happens to be. The past war called for Herculean efforts from all those engaged in this tremendous struggle.

There are two major tasks confronting the world today: reconstruction and rehabilitation and readjustment so that all peoples may eventually reach a decent standard of livelihood and an adequate outlet for their energies. But the greater task is the one of preventing another catastrophic war which from all indications will prove more destructive than the one just concluded.

We in America find it hard to visualize what goes on in other countries which are depleted. For many years now this has been a very sick world and in its present period of convalescence we surely should know enough to prevent another disastrous illness. We see this as a

physician; the physician's task is not only to heal but to prevent illness. We can either heal individual persons or with the same effort we can frequently prevent the illness of large groups, and for this reason it seems that prophylaxis is of infinitely higher importance as far as mankind is concerned than that of healing a person here and there when they have been mowed down in droves. We have tried to analyze the cause of wars among men and find ourselves at a loss for a satisfactory answer. We have tried to attribute wars to economic factors. This seems a logical enough basis but it hardly suffices. We have tried to attribute wars to racial factors but this does not stand scrutiny for long nor do the many other possible reasons that we have considered.

It seems to us that if the whole matter be reviewed from a biological point of view rather than a political one, ways could be found to eliminate wars. It must be from a study of the record that the statesmen or whatever we may choose to call those who engineer these matters have been in most instances shortsighted otherwise other methods would have been found to solve the difficulties. In spite of the continuing suffering in most parts of the world, we still feel a tinge of optimism and hope that man will reach that degree of intelligence which will enable him to prevent further bloodshed on the field of battle. There is much to be done in the coming years to heal the wounds and prevent new ones.

Food Policy in Britain

There is little doubt that Sir John Boyd Orr, who by the way has become a member of the new British Parliament, is one of the foremost authorities on food in the world. In an article, entitled, "If I Were Minister of Food in Peacetime", published recently in Discussion Circular No. 2, he expresses the opinion that the first thing to be done is to publish a statement of the findings and recommendations of the United Nations Food and Agricultural Conference, the delegates of which represented eighty percent of the population of the world. These delegates declared with one voice that: 1, the kind of food needed is known; 2, even in the best fed countries, twenty to thirty percent of the population do not obtain a sufficient amount of the right kinds of food essential for health; 3, lack of sufficient food of the right kind is a cause of disease, physical disability and untimely death; 4, the first cause of lack of food is poverty; 5, we have the knowledge and ability to produce all the food needed. The Conference also recommended that every nation should provide a diet adequate for the health of its inhabitants. It is said that these recommendations have been accepted as far as Britain is concerned.

Granted that there has been an improvement in the food of the people in Britain, say during the past twenty-five years or so, and that this improvement is mainly due to better and more suitable food, it may be argued that health would have been improved yet more if the inhabitants had eaten the kinds of food recommended by the government and advised by food authorities. Take bread for example. The Government advised strongly that whole wheat bread, made according to the formula of health authorities, should be eaten; however, people generally did not heed this advice, but continued to eat bread made of highly milled white flour from which the vitamins contained in the husk of the wheat ear had been removed, and they continue to do so. Other instances could be cited in which good advice as to food has been disregarded. However, there is no doubt that British people are better fed and, therefore, more adequately nourished than formerly.

One great innovation deserves the highest praise, viz., that the special needs of mothers and children have been provided for and on the whole the diet of the working class is better than before the war. Sir John Orr suggests that to maintain this improvement, the Government should appoint a food and agricultural commission, which would own, or at least control, the processing centers. The wholesale food trade would purchase from the commission all its supplies at a wholesale price calculated in such a way that, by the cheapest method of distribution, namely, cash and carry, retail prices would be adjusted to the capacity of the poorest families. The provision of an adequate diet for the poor would go far to abolish poverty itself, and the guarantee that there would be no lack of food adequate for health would do much to abolish one of the worst fears of poverty.

It is hoped that Sir John's advice will be taken and a commission formed to investigate thoroughly the situation as regards food in Britain and to present a report on it. Such a report would be useful.

News Items

Social Hygiene Day.—The tenth national Social Hygiene Day will be observed on February 6th. Special programs will be presented in social hygiene centers throughout the country.

Harvey Lecture.—Dr. George Wald, associate professor of biology, Harvard University, delivered the third Harvey Lecture at the New York Academy of Medicine on Thursday evening, December 20th. His subject was "The chemical evolution of vision".

Bulkley Lecture.—Dr. Fordyce Barker St. John, professor of clinical surgery, College of Physicians and Surgeons, Columbia University, delivered the annual L. Duncan Bulkley lecture at the New York Academy of Medicine, Friday afternoon, January 4th. His subject was "Cancer of the stomach—surgical aspects and means for early diagnosis."

Lower Lecture.—Dr. Charles S. Best, professor of physiology, University of Toronto Faculty of Medicine, delivered the annual Lower Lecture before the Academy of Medicine, Cleveland, Ohio, on November 16th. The subject of the lecture was "Hormonal and Dietary Factors in the Pancreas".

Dr. Minot Honored.—The Distinguished Service Medal of the American Medical Association was conferred upon Dr. George R. Minot at the meeting of the House of Delegates of the association, which was held in Chicago in December. The award was made in recognition of his researches in the problem of pernicious anemia.

Brickner Lecture.—The twelfth Walter M. Brickner Lecture was delivered on December 15th at the Hospital for Joint Diseases, N. Y., by Dr. Cecil K. Drinker, professor of physiology, Harvard Medical School, Boston. The subject of the lecture was "Physiology of immobilization and the local effects of heat and cold".

Friedenwald Medal.—The Julius Friedenwald Medal, which is presented annually by the American Gastroenterological Association has been awarded for 1945 to Dr. Lewis G. Cole, White Plains, N. Y. Dr. Cole was professor of roentgenology at Cornell University Medical College for many years, and carried on extensive research on the differential diagnosis of gastric ulcer and cancer of the gastrointestinal tract.

Lectures to the Laity.—Dr. Edward S. Rogers, Commissioner for Medical Administration of the New York State Department of Health, Albany, delivered a lecture at the New York Academy of Medicine on Thursday evening, January 10th. His subject was "The layman's part in medicine."

Dr. Edwin J. Cohn, Ph.D., chairman, department of physical chemistry, Harvard Medical School, Boston, presented a paper on "Research in the medical sciences" at the New York Academy of Medicine, Thursday evening, December 27th.

Friday Afternoon Lectures.—During the month of February, the following lectures in the current series will be given at the New York Academy of Medicine:

February 1: Present concepts of treatment of burns, by Dr. William Andrus, associate professor of surgery, Cornell University Medical College;

February 8: Roentgenological aspects of diseases of the heart and lungs of importance to the general practitioner, by Dr. Solomon Fineman, chief of the department of diagnostic roentgenology, Montefiore Hospital;

February 15: Diagnosis and treatment of malaria, by Dr. Henry E. Meleney, Hermann M. Biggs professor of preventive medicine, College of Medicine, New York University.

Annual Meeting of the Academy.—At the annual meeting of the New York Academy of Medicine, held on Thursday evening, January 3d, Dr. George Baehr, the newly elected president, delivered the annual presidential address. The program included two papers on chemotherapy, as follows: (a) The absorption, excretion and destruction of orally administered penicillin, by Dr. Walsh McDermott, assistant professor of medicine, Cornell University Medical College; (b) Penicillin in syphilis, complicating pregnancy, by Dr. Joseph Earle Moore, associate professor of medicine, Johns Hopkins University School of Medicine, Baltimore.

New York Heart Association.—Dr. Edwin P. Maynard, Jr., presided at a scientific session of this association which was held on Friday evening, January 11th. The program consisted of two papers, as follows: (a) Diagnosis and medical care of the tetralogy of Fallot and other types of congenital cardiac lesions, by Dr. Helen B. Taussig, Johns Hopkins Hospital and Medical School; (b) The influence of trauma and strain on the production and aggravation of heart disease, by Dr. Howard B. Sprague, Massachusetts General Hospital, Boston. The discussion was general.

Soviet Medicine.—At a meeting of the American-Soviet Medical Society, held at the New York Academy of Medicine on Monday evening January 7th. The program consisted of a symposium on recent observations on Soviet medicine. The following papers were presented: Dr. Michael B. Shimkin, assistant chief, Office of International Health Relations, U.S. Public Health Service; Dr. Duncan MacInnes, member of Rockefeller Institute, department of physical chemistry; and Dr. Jacob Heiman, assistant professor, department of cancer research, Columbia University and editor of the *American Review of Soviet Medicine.*

Medical Survey Urged as a Permanent Peacetime Measure.—Dr. Luther E. Woodward, at the thirty-sixth annual meeting of the National Committee for Mental Hygiene, urged the continuance, as a permanent peacetime measure, of the Medical Survey used by Selective Service as a procedure in selecting men for the armed forces. He outlined the history and purposes of the Medical Survey, and described it as "a device for obtaining health, work, social and educational histories of registrants and for making these available to the induction board examiners as aids in their examinations and evaluations of registrants."

Dr. Longcope to Retire.—Dr. Warfield T. Longcope, professor of medicine at the Johns Hopkins University Medical School since 1922, will retire on June 30th and will be succeeded by Dr. A. McGehee Harvey, a major in the Medical Corps of the U. S. Army, now on terminal leave. In making the announcement, Dr. Isaiah Bowman, president of the University, said that the position would continue to carry the additional duties of physician-in-chief of the Johns Hopkins Hospital and director of the Medical School's Department of Medicine. Dr. Longcope was formerly director of the Ayer Clinical Laboratory of the University of Pennsylvania and associate professor of medicine at Columbia University.

Officers of the New York Academy of Medicine.—At a stated meeting, held on Dec. 6th, Dr. George Baehr, director of clinical research at Mt. Sinai Hospital, was elected president, succeeding Dr. W. W. Herrick, who died last June. Dr. Baehr also served as chief medical officer of the Office of Civilian Defense. Other officers elected were: Dr. Cornelius P. Rhoads, Dr. J. William Hinton and Dr. J. Burns Amberson, vice-presidents; Dr. Robert E. Pound, recording secretary; Dr. Shepard Krech, treasurer. Officers reelected include: Dr. Herbert B. Wilcox, director; Archibald Malloch, librarian; Dr. E. H. L. Corwin, executive secretary of the Committee on Public Health Relations; Dr. Mahlon Ashford, executive secretary of the Committee on Medical Education; and Dr. Iago Galdston, executive secretary of the Committee on Medical Information.

Medical Education and Licensure.—The forty-second annual Congress on Medical Education and Licensure will be held in Chicago on Monday and Tuesday, February 11th and 12th. On Monday the program will deal with problems in medical education at undergraduate, graduate, and postgraduate levels, and Tuesday will be devoted mainly to questions of licensure.

Blood Bank for Cancer Patients.—The establishment of a Field Army Blood Bank for cancer patients at Memorial Hospital, basic unit of the Memorial Cancer Center, was announced recently by Dr. Cornelius P. Rhoads, director of the hospital, and Mrs. Francis J. Rigney, Commander, Field Army, New York City Cancer Committee. The registration of donors will be handled at 2 West 106th Street, the Old Memorial Hospital Building, which is also Field Army headquarters. Blood donations by members of the Field Army who volunteer will be taken at the New Memorial Hospital, 444 East 68th Street. The blood of those who are acceptable will be used for cancer patients who are unable to pay a professional donor. If blood is given to a patient able to pay, the money received will be placed in the general fund of Memorial Hospital where it will accrue to the benefit of cancer patients. The service will be extended to other hospitals as required.

Symposium on Inguinal Hernia.—The Section of Surgery of the New York Academy of Medicine presented a symposium on the surgical treatment of inguinal hernia, at a meeting of the Section held on Friday evening, January 4th. Dr. William F. Mac Fee conducted the symposium. Statistical reports on the number of cases operated upon during the period of January 1940 to January 1945, from the following hospitals: Bellevue, first, second, third and fourth divisions; Hospital for Special Surgery, Mount Sinai, New York, Presbyterian, Roosevelt, St. Vincent's and St. Luke's. Dr. Gerald H. Pratt described the technique of steel wire repair of inguinal hernia, which was illustrated by motion pictures. Major Edwn A. Balser, U. S. Veterans Hospital, demonstrated, by means of motion pictures, early postoperative ambulation. A general discussion followed.

New Officers of A.M.A.—At the meeting of the House of Delegates of the A.M.A., held in Chicago during the week of December 3rd, Dr. Harrison H. Shoulders, of Nashville, Tenn., for many years speaker of the House of Delegates, was named president-elect. Dr. William R. Molony of Los Angeles, for many years a member of the House of Delegates, was elected vice-president. Three new members were elected to the board of trustees: Dr. John H. Fitzgibbon, Portland, Ore., Dr. James R. Miller, Hartford, Conn., and Dr. Dwight H. Murray, Napa, Calif. Officers reelected include: Dr. Olin West, secretary; Dr. Josiah J. Moore, treasurer; Dr. Herman G. Weiskotten, member of the Council on Medical Education and Hospitals; Dr. Henry R. Viets, member of the Council on Scientific Assembly, and Dr. Louis A. Buie, member of the Judicial Council. Dr. Alfred W. Adson, Dr. Walter B. Martin and Dr. Raymond L. Zech were elected members of the Council on Medical Service and Public Relations. The next annual meeting of the association will be held in San Francisco, July 1-5, 1946, and plans are being made for the celebration of the centennial of the association to be held in Atlantic City in 1947.

Voluntary Health Insurance Advocated by Medical Societies.—At a meeting of the presidents of the medical societies of twenty-five Eastern and Middle Western States, held in Chicago last month, resolutions were adopted advocating voluntary health insurance for each State, in place of a Government-supervised plan, supported by taxes, as proposed by President Truman, according to a report in the *New York Times*. Forty-seven programs for voluntary health insurance are now in operation in twenty-five States, it was pointed out, and they have proved that the subscriber can be furnished the services of a physician of his choice, hospitalization, surgical care and medicines for sixty cents a month.

Red Cross Advisory Committee.—It was recently announced that an Advisory Board on Health Services had been appointed by the American Red Cross to aid in coordinating the activities of the organization in the health field. Basil O'Connor, national chairman of the American Red Cross, has named Dr. Lewis H. Weed, Baltimore, as chairman of the board and three vice-chairmen as follows: Dr. Roger I. Lee, Boston; Dr. John D. Lyttle, Los Angeles; and Dr. John Romano, Cincinnati. Members of the executive committee include Dr. George Baehr, New York, vice chairman; Dr. Kenneth I. Maxcy, Baltimore, and Dr. Henry R. Viets, Boston, secretary. The committee consists of 109 men and women from twenty-five states and Washington, D. C., and includes not only physicians but nurses, dentists, health educators, medical and psychiatric social workers, hospital administrators and others. The first meeting of the board's executive committee was held in Washington on December 15th and the entire board will meet at least once a year.

Personal.—Dr. Abraham Flexner, Princeton, N. J., has been named head of the committee of scientists sponsoring the establishment of the Hebrew University-Hadassah Medical School in Jerusalem.

Dr. George B. Darling, formerly president of the W. K. Kellogg Foundation, has been appointed executive secretary of the National Academy of Sciences and of the National Research Council.

Dr. Fletcher Colby presented a paper on "Pulmonary emboli and venous thrombosis in urology", at a combined meeting of the Section of Genitourinary Surgery of the New York Academy of Medicine and the New York Section of the American Urological Association, held at the Yale Club on December 6th.

Major General Shelley U. Marietta, commanding general of Walter Reed General Hospital; Brigadier General James S. Simmons, chief of the preventive medicine service; and Brigadier General Edward Reynolds, chief of the supply service of the army medical department were awarded Distinguished Service Medals recently by Surgeon General Kirk.

The following members of the Office of the Surgeon General have been awarded the Legion of Merit: Colonel Floyd L. Wergeland, Colonel Bryan C. Fenton, Colonel Robert E. Peyton, Colonel Joseph F. Crosby, Lt. Colonel Mason Ladd, Lt. Colonel Aims C. McGuinness, Lt. Colonel Thomas H. Sternberg, and Lt. Colonel Lee I. Park.

Colonel James B. Brown, M.C., chief of plastic surgery at Valley Forge General Hospital, has been appointed senior consultant in plastic surgery to the Surgeon General.

Book Reviews

Modern Psychiatry

Modern Psychiatry. By WILLIAM S. SADLER, M.D., F.A.P.A., consulting psychiatrist to Columbus Hospital, Chicago. St. Louis: The C. V. Mosby Co., 1945. Pp. 896. Price $10.00.

Dr. Sadler has contributed much to the understanding of psychiatry by the layman as well as the physician. He is sane in his judgments, simple and effective in his literary style. It is not his custom to deal in polysyllables, although he uses them when required. He is particularly interested in what he calls "personology", a word not in any dictionary, but which ought to belong to the terminology. Problems of personality, maladjustment, psychoneuroses and psychoses confront every physician at times. If he shrugs his shoulders or brushes off his patients as "queer", he has failed to recognize a great opportunity for doing good. Now that psychosomatic medicine has found a place in daily routine medicine, a text of this kind re-enforces the facts acquired in history taking and offers therefrom a means for correcting the milder forms of aberration without labelling the patients *insane.* Anyone who stops to reflect on past misdeeds or errors in judgment or passions of fear or hate or anger, run wild for the moment, must realize how easy it is to get off center. The "norm" is purely a relative term, and is only an "average" of the conduct expected of most persons at all times. Thoughts of stealing, lying, illicit yielding, suicide or even the taking of the life of another may creep into our consciousness. Usually they are promptly corrected by reason, and it is only when they remain uncorrected that they become cumulative and dangerous to the future happiness of the person concerned, and to his social contacts. All of these matters are carefully weighed and considered in this excellent book. For example, the boundary line between "functional" and "organic" disease is exceedingly elastic, and the two may well co-exist in any patient; for functional disturbances, if long continued, may cause organic changes. The reverse seems also to be true. Here is a book which can be referred to again and again with pleasure and profit.

Obstetrics

Textbook of Obstetrics. Designed for the Use of Students and Practitioners. By HENRICUS J. STANDER, M.D., F.A.C.S., profesor of obstetrics and gynecology, Cornell University Medical College. Illustrated. New York and London: D. Appleton-Century Co., 1945. Pp. 1277. Price $10.00.

This is Dr. Stander's third revision of the well-known Dr. J. Whitridge Williams text. The first six editions were written by the late Dr. Williams; the last three by Dr. Stander. The general layout of the book varies from previous editions, in that chapter headings are not used, but "sections" and subsections instead. This, the author states, is done to make further revisions easier to carry out. The matter of pelvimetry is considered in detail, and the older clinical methods are contrasted with the newer, especially with x ray studies of the pelvis. This latter can be abused, and can also give false information if incorrectly interpreted. In Stander's clinic both methods are used to supplement each other which seems entirely reasonable.

The bugaboo of "maternal mortality" which gave the free-lance writers great opportunity to make space-rate fees awhile ago, has been greatly reduced through prenatal care. This is well-defined on page 251, and covers the entire period up to the first stage of labor. Patients must register early, and a complete physical is done at the outset including serological and other blood studies. Then, during the following seven months, they must report at least once monthly, followed by a two-week interval visit for the remaining period. This goes for all patients, public or private. Puerperal infections are still a major cause of fatalities, but statistics should be expressed in terms of gravid women rather than in live-births. Women die from heart disease, pneumonia, pyelitis and blood dyscrasias whether pregnant or not, but the accoucheur is often blamed if pregnancy is thus associated. This is unfair and gives a false impression. It is interesting to note (page 1138) that Semmelweis was not the first to use chlorinated lime,—he was antedated in this by Thomas Alcock in 1827! But let this not detract from Semmelweis' greatness. Ther is no better book for either student or practitioner than this of Stander's. Some forty-three years of background amply prove this fact.

Neuro-Ophthalmology

Neuro-Ophthalmology. By DONALD J. LYLE, B.S., M.D., F.A.C.S., lecturer on neuro-ophthalmology, Medical College of the University of Cincinnati. Illustrated. Springfield, Ill.: Charles C. Thomas, 1945. Pp. 395. Price $10.50.

Both the eye and the ear are intimately associated with the central nervous system, but this association has not been fully understood by casual physical examiners until quite recently. Bárány was among the first to emphasize the relationship of the vestibular nerve to nystagmus, and to trace the phenomenon to the deep cerebral centers. Books like Dr. Lyle's bring together data loosely scattered throughout medical literature. Normal anatomy and physiology are basic in all medicine, but especially important is neuroanatomy in relation to the special sense organs—ear and eye. Much has been learned about this relationship in the pathological laboratory, both in the gross and microscopic divisions, and it is all set down here in order and in detail. Beginning with the embryological development of the neural structures of the eye, the author considers "the visual system", and studies the visual cortical areas of the brain with the associated tracts and areas. Both the motor and sensory connections are described in their relation to the ocular muscles, facial paralysis, herpes zoster ophthalmicus, etc. The blood vascular system in its nutritional importance to brain and eye is reviewed anatomically, and pathological deviations from the normal are explained so that "symptoms" can be well understood,—changes in the retina for example. Syphilis, encephalitis and the demyelinating disorders (multiple sclerosis) may be diagnosed through an understanding of symptoms referable to the eyegrounds. The same is true of intracranial and orbital neoplasms. The various "syndromes" which include eye symptoms are described, such as those found in angle tumor. Finally, there are the eye manifestations of head injuries (skull fractures) which are often determinative in establishing an accurate diagnosis.

This book is a *must* for all who specialize in conditions involving the head. It is elemental and yet sufficiently comprehensive.

Medicine and the Changing Order

American Medical Practice in the Perspectives of a Century. By BERNHARD J. STERN, Ph.D., lecturer in sociology, Columbia University; visiting professor sociology, Yale University. New York: The Commonwealth Fund, 1945. Pp. 156. Price $1.50.

The Committee on Medicine and the Changing Order was set up by the Council of the New York Academy of Medicine during the winter of 1942. It got under way in February, 1943. Headed by Dr. Malcolm Goodridge, chairman, and supported by committee members who are leaders in American medicine in Greater New York, the set-up also has several lay readers in business, economics, industry, labor and nursing as cooperating helpers. A grant from the Commonwealth Fund has made this study possible. Dr. Stern's report is the first completed synthesis to be published; others slated for early publication are to cover government in public health, preventive medicine, nursing, the American hospital, medical education, medical research, etc. The several purposes are set down seriatim and are chiefly three in number: To survey and to improve standards of medical practice, if possible; to study how the greatest and best medical care can be brought to the greatest number of people wherever situated; and to explore methods of distributing needed services at a lower per capita cost than now obtains.

As for Dr. Stern's study, it begins with an "overlook" of social and economic changes in American life, goes on to the expanding horizons of medicine, considers the specialist and general practitioner, supply and distribution of physicians, the "patient load", physicans' income, and the total effect produced by the withdrawal from practice into the military services. Every page is documented by abundant footnotes giving sources of material, and it is surprising how much important information the author has condensed into his relatively small volume. As to specialization, he says that it is in part the result of new instruments and machines such as the x ray and electrocardiogram which require special study and understanding to be efficient. However, it is also true that specialists have created the machines with which they work. This is an interesting book and deals well with an important bird's-eye view of the entire field of medicine.

Temperature Measurement and Control

Temperature. Its Measurement and Control in Science and Industry. Papers presented in a Symposium held in New York City, November, 1939, under the auspices of the American Institute of Physics, with the cooperation of the National Bureau of Standards National Research Council, and officers and committees of various scientific societies. With numerous illustrations. New York: Reinhold Publishing Corp., 1941. Pp. 1362. Price $11.00.

This compilation of papers, some 125 in all, probably contains everything that has ever been discovered or thought of concerning this broad theme. Physicians are likely to think of temperature in terms of a chart hanging at the foot of a patient's bed, or of a little glass tube outside a window on a frosty morning, but this is scarcely more than a microscopic view of the subject which covers engineering, metals and ceramics, oil industries, optical and radiation pyrometry and much more. The physiologist will be interested chiefly in the temperature of the human body, its relation to environment, the human thermoregulatory mechanism, the significance of average skin temperatures, vasodilatation and vasoconstriction as variants of temperature, and observations on humans suffering from cancer. Testing and recording of temperatures calls for a good deal of equipment all of it of the "precision variety". The little thermometer all of us carry when about our daily rounds seems so simple and yet it is the result of the work of countless men who were interested, perhaps, more in "pure science" than in a man lying on his sickbed. That is the way of science in general. It deals with cold hard facts which are ground out of grievous disappointing experiments, and protocols that refuse to work according to theory. In such a field no one who is thin-skinned or easily discouraged can ever hope to accomplish anything at all. Only the stout-hearted lover of truth, the curious, quizzical, tireless, laborer who knows no "hours", ever succeeds in establishing new facts about old things. He may give of his time, energy and substance and never, from his own viewpoint, seem to contribute one jot to the sum-total of human knowledge. Here is a great volume which is full of deductions and conclusions which are based on a working acquaintance with all of the physical sciences, and with mathematics. It is not "easy reading", in fact it is not reading at all, but something to be chewed and digested; an amazing evidence of the intellect of man.

Ophthalmology

A Textbook of Ophthalmology. By SANFORD R. GIFFORD, M.A., M.D., F.A.C.S., formerly professor of Ophthalmology, Northwestern University Medical School, Chicago. Third edition. Revised. Illustrated. Philadelphia and London: W. B. Saunders Co., 1945. Pp. 457. Price $4.00.

In this new edition sections have been added or revised which deal with ptosis, contact lenses, cyclodiathermy, and epidemic keratoconjunctivitis. The illustrations "have been improved" and some new black and white ones have been added. This revision was completed just before Dr. Gifford's death, and, therefore, represents his latest concepts in teaching "eye work" to students. The publishers announce that in future editions Dr. Francis X. Adler, professor of ophthalmology at the University of Pennsylvania School of Medicine, will be the editor. The colored plates in this present edition are excellent. This is important, since it is difficult to appreciate the gross changes in the eye due to infections, cataracts and new growths unless these changes can be made to simulate the actual conditions. The manual fits well into the average coat pocket, a desideratum which always appeals to medical students.

Office Gynecology

Medical Gynecology. By JAMES C. JANNEY, M.D., F.A.C.S., assistant professor of gynecology, Boston University School of Medicine. With ninety-seven illustrations. Philadelphia and London: W. B. Saunders Co., 1945. Pp. 389. Price $5.00.

This book evaluates the patient from the clinical viewpoint as revealed by the history, physical findings, patient's complaints, special tests, and gynecological treatments. The author incorporates the physiological basis of each disease entity in terms of symptomatology, the heart of every medical problem. The mechanism of symptoms is stressed, not only as an aid in correct diagnosis but also in the formulation of a treatment that will be physiological rather than arbitrary. Although the primary aim has been the cor-

relation of didactic lectures rather than clinical experience, the book will serve as refresher material for the practitioner by bringing him up-to-date on newer developments in the field. The final chapter includes a discussion of sociomedical problems in gynecology, dealing with their emotional, economic and social aspects, the use of contraceptive, and marital maladjustments.

Psychological Warfare

Total War and the Human Mind. A psychologist's experiences in occupied Holland. By MAJOR A. M. MEERLOO, M.D., F.R.S.M. New York: International Universities Press, Inc., 1945. Pp. 78. Price $1.75.

This study of psychological warfare differs from others published in this country because it was thought out and prepared in occupied territory. The author lived for more than two years under German oppression, and it was especially the sense of moral and intellectual isolation which urged him and others to study. He took part in various study groups and this book may be considered as the result of such team work. It stands to reason that in the circumstances it has a certain emotional flavor, though it is perhaps none the worse for that. There is one important theme which needs to be emphasized—the theme of "Lest we forget". Men have on the whole such short memories and human imagination is all too liable to fail where past misery is concerned. Between 1918 and 1939 people forgot too much. Because they had forgotten the nature of man and his capacity to err, they did not understand what was taking place in the world. Even now our imagination is insufficiently exercised. Even now we do not realize to the full that certain vicious roots in human character may send up shoots which will wreck civilization. When we are at peace again we must not allow ourselves to overlook the part played by men's characters in the conduct of war. This book deals, from a social and psychological point of view, with some of the many problems of war.

Prosthesis

Facial Prosthesis. By ARTHUR H. BULBULIAN, M.S., F.A.C.D., director, Museum of Hygiene and Medicine, The Mayo Foundation, Rochester, Minn. With two hundred and two illustrations. Philadelphia and London: W. B. Saunders Co., 1945. Pp. 241. Price $5.00.

War injuries always bring renewed interest in restoration of injured or missing parts of the body. On this reviewer's desk there is another volume of almost the same size as this with nearly the same title, but bearing the imprint of another publisher! This is all to the good, for there are few books on prosthesis as compared with many on plastic surgery. A prosthesis is often the only recourse after plastic surgery has done as much as it can, or as much as the patient will allow. Dr. Bulbulian lays down the first principles to be observed in this work; namely, the restoration must be "natural". It must be easy to put on and take off, but not loose (a question of fit), and must rest comfortably when worn. The material must be durable under all conditions, fast in color and easily cleaned. The ideal material must be rigid enough and yet pliable. Tools for working these materials are pictured and methods of taking impressions and making casts are described. There are chapters on reconstruction of the nose, ear and eye, on methods of retention, and an appendix which shows "selected illustrative cases". The author is very careful not to encroach upon the work of the plastic surgeon, but is aware of the importance of co-operation. He says: "Replacing of missing tissue about the face by one's own skin is far more desirable than any artificial substitute." However, there are some five conditions where prosthesis may be preferable.

1, possibility of recurrence in malignancy; 2, unhealthy vascularity due to irradiation; 3, size and extent of the deformity; 4, age; 5, inability to stand the necessary time and expense of several operations. In some instances, prosthesis may be the *only* method open to the patient. This book is comprehensive, detailed, readable, and a welcome addition to the rather sparse literature which is pretty well scattered and not easy to find on short notice.

Hematology

Clinical Atlas of Blood Diseases. By A. PINEY, M.D., physician, St. Mary's Hospital for Women and Children, and STANLEY WYARD, M.D., F.R.C.P., physician, the Royal Cancer Hospital, London. Sixth edition. With forty-eight illustrations, forty-five in color. Philadelphia: The Blakiston Co., 1945. Pp. 138. Price $5.00.

This outline serves a useful purpose in refreshing knowledge of blood disorders for the general practitioner and stimulating further search in the literature. The composite set of illustrations are accompanied by an outline of each disease entity enabling quick familiarization with a particular problem. The entire field of hematology is covered so tersely that it makes a ready reference handbook for those encountering hematological problems. To clarify the meaning of terms a glossary defines each hematological term used in the text.

Specialized Medical Dictionary

Dictionary of Gynecology and Obstetrics. By CLARENCE WILBUR TABER, medical editor. With the collaboration of MARIO A. CASTALLO, M.D., F.A.C.S., assistant professor of obstetrics, Jefferson Medical College. Illustrated. Philadelphia: F. A. Davis Co., 1944. Pp. over 700. Price $3.50.

This specialized medical dictionary derived for those interested in gynecology and obstetrics is a unique step in the right direction. It presents in one volume the vocabulary of the subject unencumbered by irrelevant words, obviating the necessity of searching for the desired word through a general medical dictionary. Since many of the definitions are cyclopedic the subject matter is relatively extensive for a lexicon. The dictionary itself is made more accessible by a fact-finding index.

Emotional Tensions

Your Nerves. How to Release Emotional Tensions. By LOUIS E. BISCH, M.D., Ph.D., New York: Wilfred Funk, Inc., 1945. Pp. 310. Price $2.50.

This little book is a series of medical sermons to bolster the morale of nervous individuals. It ranges from borderline deviations in behavior to actual insanity. Unfortunately, most of these disorders cannot be reasoned out of an individual because they have not been reasoned into him. They are etched impressions of emotional origin and can only be released by emotional appeal or by psychoanalytic procedures. Persons with minor nervous disorders may be helped but those who actually need guidance cannot derive benefit from such a two dimensional text.

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JANUARY 1946

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Medicolegal Notes

Damages

In an automobile injury case an award by the jury of $6,580 was held to be adequate where the doctors agreed that the injury had aggravated the condition of the plaintiff at the time of the injury, and the evidence showed that she had suffered physical disability, which, with reasonable medical certainty, appeared to the court to be permanent. Messinger vs. State, New York Court of Claims, 51 N.Y.S. 2d 506. The injuries confined the plaintiff to a hospital and to her home for a considerable time.

An award of $40,000 to a female infant for injuries to face, mouth and lips was held excessive, and the court properly set aside the verdict unless the amount was reduced to $22,500. Stever vs. Associated Transport, Inc. Appellate Division, 53 N.Y.S. 2d 548.

For injuries in an automobile collision, which included $451 for medical and other expenses, $1,000 was held inadequate, and the plaintiff was entitled to a new trial unless the defendants would stipulate to increase the verdict to $2,000. Weiner vs. Dairyman's League Co. Operative Ass'n., Inc., Appellate Division, 53 N.Y.S. 2d 834.

A verdict of damages for injuries to the plaintiff by being struck by a sanitation truck negligently operated by an employee of the city was held excessive in so far as it exceeded $37,500. Burdett vs. City of New York, Appellate Division, 52 N.Y.S. 2d 646.

A plaintiff can introduce evidence concerning and recover damages not only for the specific injury complained of, but for such other injuries as might reasonably and naturally be presumed to result from it without pointing out such injuries. So, the testimony of a physician in a personal injury action that the plaintiff was suffering from a traumatic fracture of the urethral canal and that this condition was permanent was held admissible under a petition which alleged that a fall permanently injured the plaintiff in and about his ankle, urethra, bladder, scrotum and body. Walters vs. Louisville Water Co., 206 Ky. 511, 177 S.W. 2d 889.

Conflicting Expert Evidence as to Partial Loss of Use of Arm

In a suit under the Louisiana Workmen's Compensation Act for alleged total permanent disability the medical evidence showed that the plaintiff had suffered a partial loss of the use of function of his left arm. One doctor testified that the loss amounted to fifty percent; another estimated it to be twenty-five percent. Both physicians were eminent in the field of orthopedics. The court, since it had no way of determining which estimate was correct, considered that by giving as much credence as possible to the opinions of both doctors, it was fair to conclude that plaintiff had suffered a permanent partial loss of the use of function of his left arm to the extent of thirty-seven and a half percent. Falgoust vs. Maryland Cas., Louisiana Court of Appeals, 22 S. 2d 312.

Plaintiff's Testimony as to Details of Treatment

In an action in the Federal District Court for the District of Columbia, for malpractice in treating a wrist fracture, the result of a fall, the x ray pictures taken disclosed a comminuted Colles fracture. After the cast was removed the swelling did not go down and the plaintiff suffered much pain. After a course of treatment by the defendant's physician at the defendant's hospital, the plaintiff went to another doctor, who had an x ray made of the arm which showed that union had not been accomplished. The pain was thereafter alleviated, but the fracture was never completely healed.

Three qualified experts for the defendant testified that defendant's method of treatment corresponded generally with good surgical practice in the District of Columbia.

The United States Court of Appeals for the District of Columbia, Byron vs. Eastern Dispersary, etc., 136 F. 2d 278, reversing judgment for the defendants, held that an instruction to the jury was erroneous, which in effect told the jury to ignore all the evidence in the case except that of the experts and to find for the defendants if the treatment administered by the doctor squared with District of Columbia practice. The plaintiff's testimony as to the doctor's looking alarmed when the cast was removed, and his subsequent remarks as to the effect of a rebreaking of the wrist, should have been submitted to the jury for what it was worth.

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Shambaugh, G. E., Jr.
J. Iowa State Med. Soc. 31:373-377.

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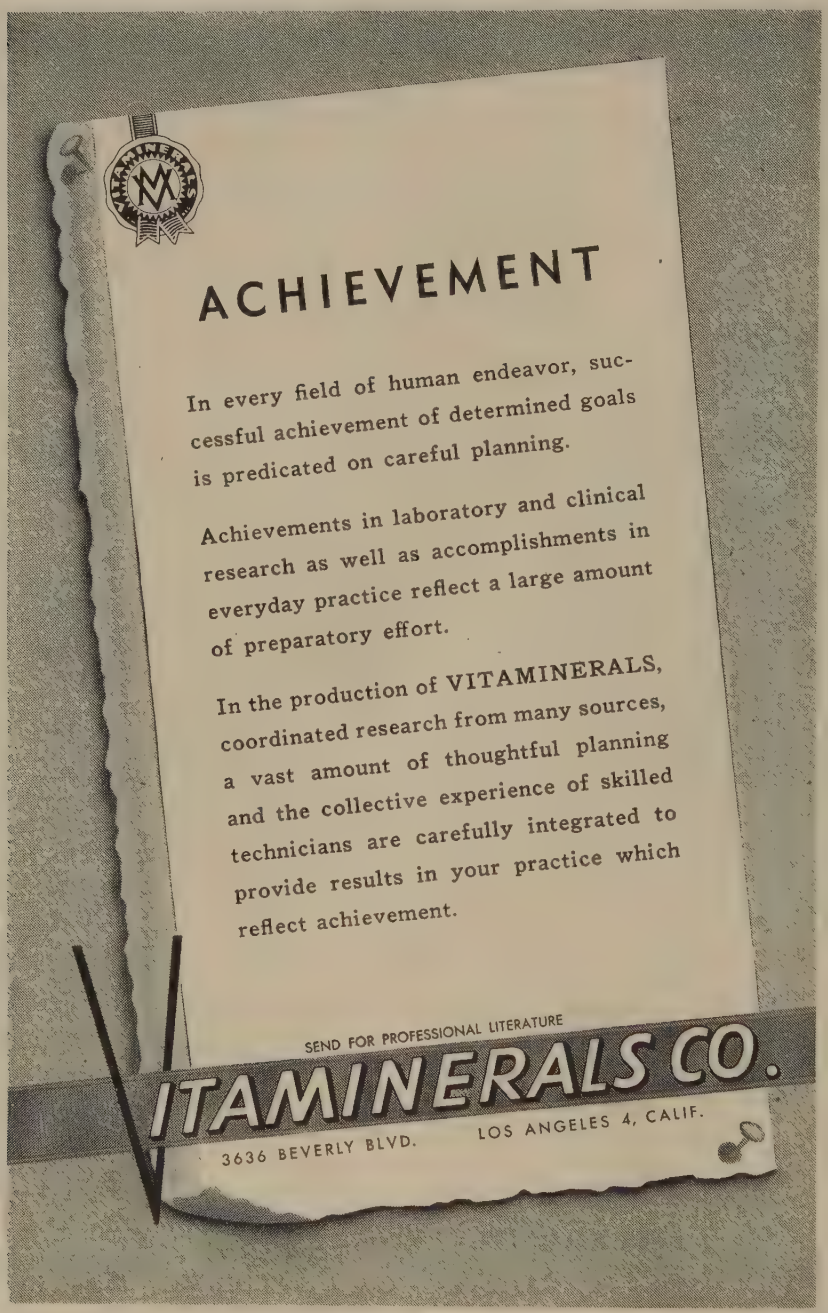
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Military Quarantine Program

At the thirty-ninth annual meeting of the Southern Medical Association, held recently in Cincinnati, Lt. Colonel O. R. McCoy, M.C., director of the Tropical Disease Control Division, Office of the Surgeon General, said that a joint Army-Navy and Public Health Service military quarantine program would take all possible precautions against the introduction of new tropical diseases into this country through the deployment of troops.

This precautionary program, he pointed out, would be carried on in addition to the preventive measures taken by the services for all troops serving overseas. Immunization and high standards of sanitation have been enforced and the Army has taken definite steps to minimize secondary cases of malaria among soldiers already returned to the United States. The latter precaution requires that soldiers taking suppressive medication against malaria when they return to this country continue to take the drug for twenty-eight days.

Dengue, sandfly fever, and scrub typhus are limited in their course having no recurrences, and so offer little hazard. The incidence of carriers of bacillary dysentery is low in military personnel, and the chances of transmission of filariasis in the United States is slight.

"Troops are examined," Colonel McCoy concluded, "before departure from abroad and after arrival in this country to identify and screen out for treatment individuals who may have acquired communicable diseases during overseas service. Also new regulations have been formulated which are intended to prevent the introduction of disease through infected animals, plants or insects."

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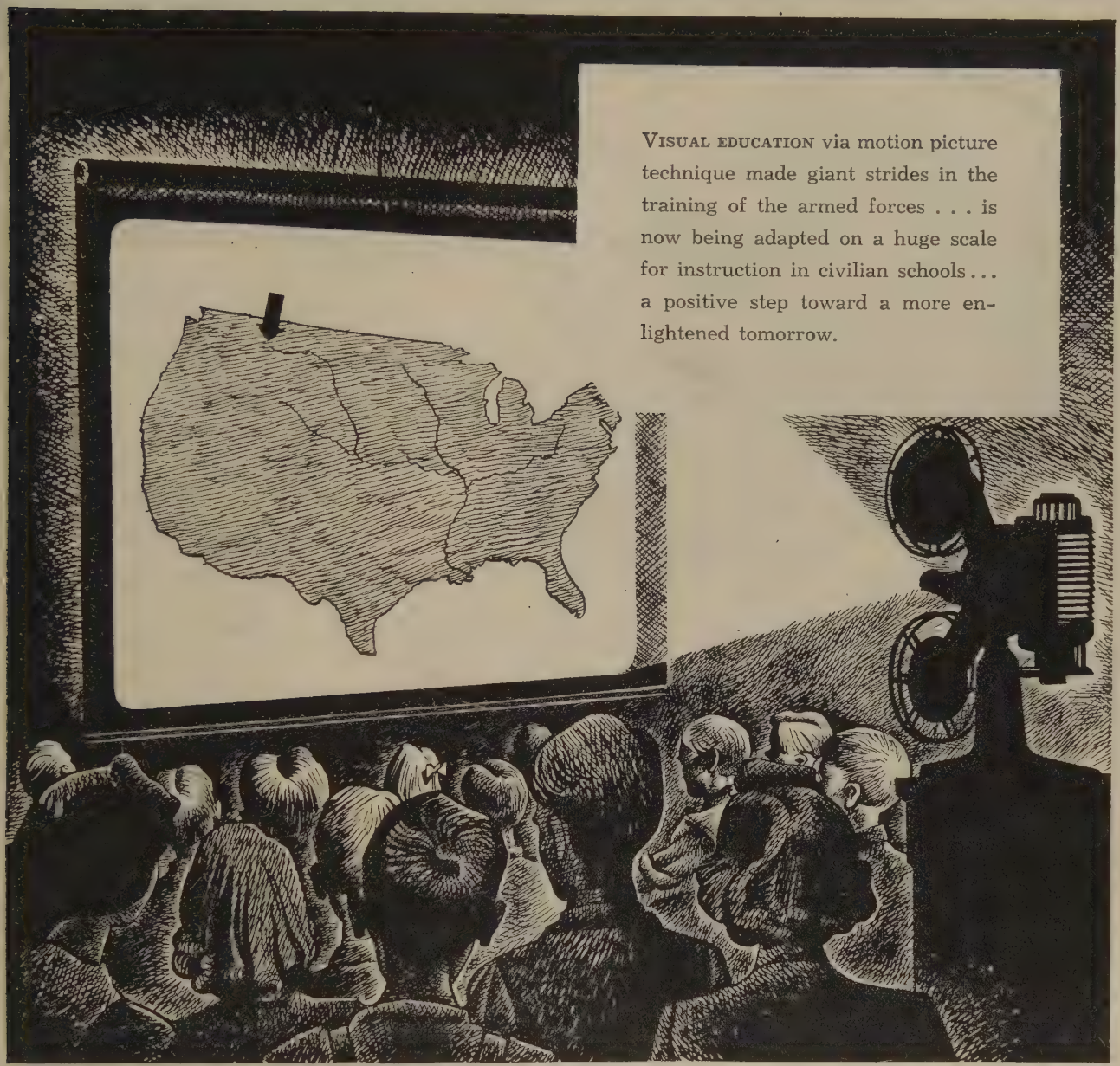

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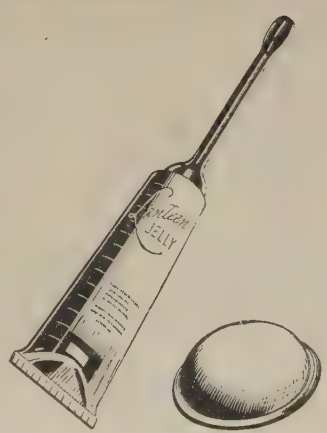

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Physical Examinations of Men Released from Service

Over 1,250,000 physical examinations of Army officers and soldiers being demobilized in the United States were completed by Army doctors during October, according to a report made by Surgeon General Kirk. The two thousand Army doctors assigned to separation centers alone completed examinations of 757,433 men during this period. In addition, Army doctors are assigned to other separation offices.

It is the policy of the Army, General Kirk said, to see that every man being released from the service is given the ultimate medical care before returning to civilian life. In addition, he pointed out, in order to speed demobilization, the complete physical examination has been so planned that the average soldier is processed by eight different doctors in one hour from the time the first doctor sees him, provided he has no ailment.

In this chain of medical examinations he is looked over by a dentist, an eye specialist, an ear, nose and throat specialist, an orthopedist, a surgeon, a urologist, and an internist. Finally an overall medical officer, who has before him the reports of all preceding examinations, including all x rays and laboratory tests, with the exception of serology, determines his physical condition. If it is necessary the man is referred to a ninth doctor —a psychiatrist.

Even with the present and comparatively low rates of tuberculosis mortality prevailing these days, it is estimated that in the entire world tuberculosis still causes more than two million deaths in a single year.—Godias Drolet in *Clinical Tuberculosis.*

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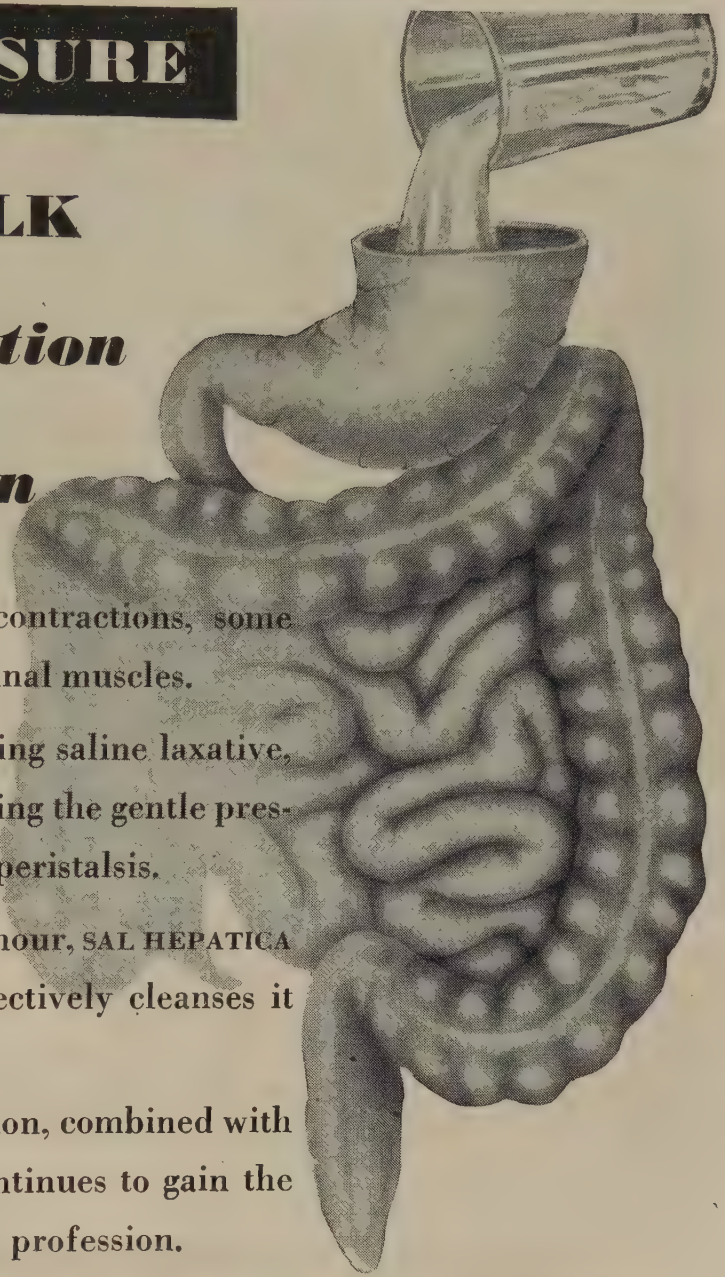

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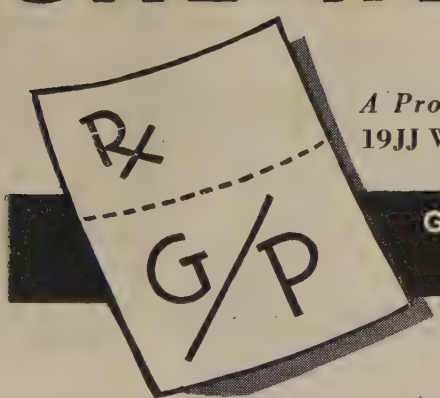

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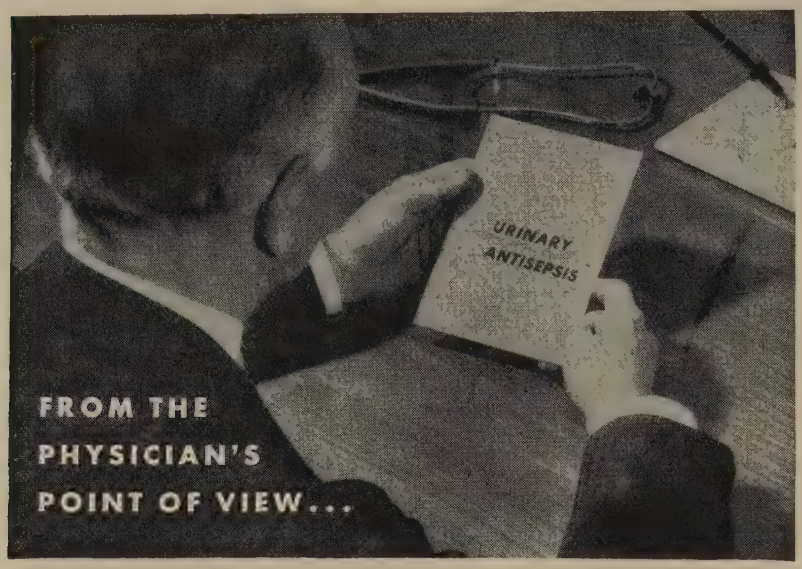

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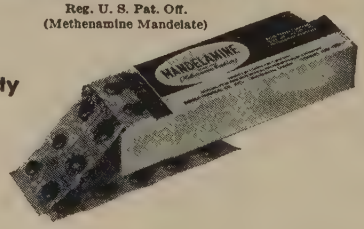

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A course of instruction in the repair and maintenance of artificial limbs has been inaugurated at Forest Glen, Walter Reed General Hospital, for the purpose of teaching every amputee how to take care of his own prostheses. Colonel Leonard T. Peterson, director of research on prosthetics, U. S. Army, suggested the program which will deal with model limbs and various technical devices, and will instruct the amputees in the working and maintenance of their prostheses. He pointed out that the Army's chief concern in obtaining artificial limbs is a proper fit, lightness and strength of the limb, and perfection in mechanical parts. Discussing the problems entering into the two and a half year Army amputation program, Colonel Peterson said that the Central Agency under the National Research Council on Prosthetics plans to continue prosthetic research, so that anyone, after leaving the service, may benefit by the advancements made by the organization.

The most transient contact with an infectious person may result in the successful inoculation of the tubercle bacillus. It is largely owing to these "occasional" infections that the vast majority of adults in civilized countries are found to be tuberculin-positive, being carriers of a tuberculous process. Even a single bacillus is adequate to establish the focus.—E. Fraenkel, M.D., *Tubercle*, May, 1943.

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The development of a sensory aid for the blind which operates on electronic principles akin to radar, and which was first initiated at the request of The Surgeon General, has reached an advanced stage, according to an announcement by the War Department. The experimental model, weighing nine pounds and connected with a single earphone, contains a three-watt lamp which focuses a narrow ray of light through a lens. Any object within twenty feet of the device will reflect the light back toward a second lens, which, in turn, transfers the light to a photoelectric cell, divided into five units for computing distance. The cell then produces electrical bursts of energy or sound tones and these are transmitted to the ear through a standard hearing device. The handle of the device is parallel to the direction of the first light ray, enabling the user to detect, through the position of his hand, the direction of the object.

Although the laboratory model of the device has been completed and tested at Signal Corps Engineering Laboratories, it is not yet considered sufficiently perfected to be practical for use, and requires further development before being placed in production.

It is obvious that industry is going to have tuberculosis as a by-product. The Army has and will have tuberculosis as a by-product, and the civilian population is going to continue to feel the impact of both. This may severely tax bed facilities for there is no bed surplus anywhere if we really use the beds the way they should be used.—Harry M. Mustard, M.D. *Transactions National Tuberculosis Association* 1943.

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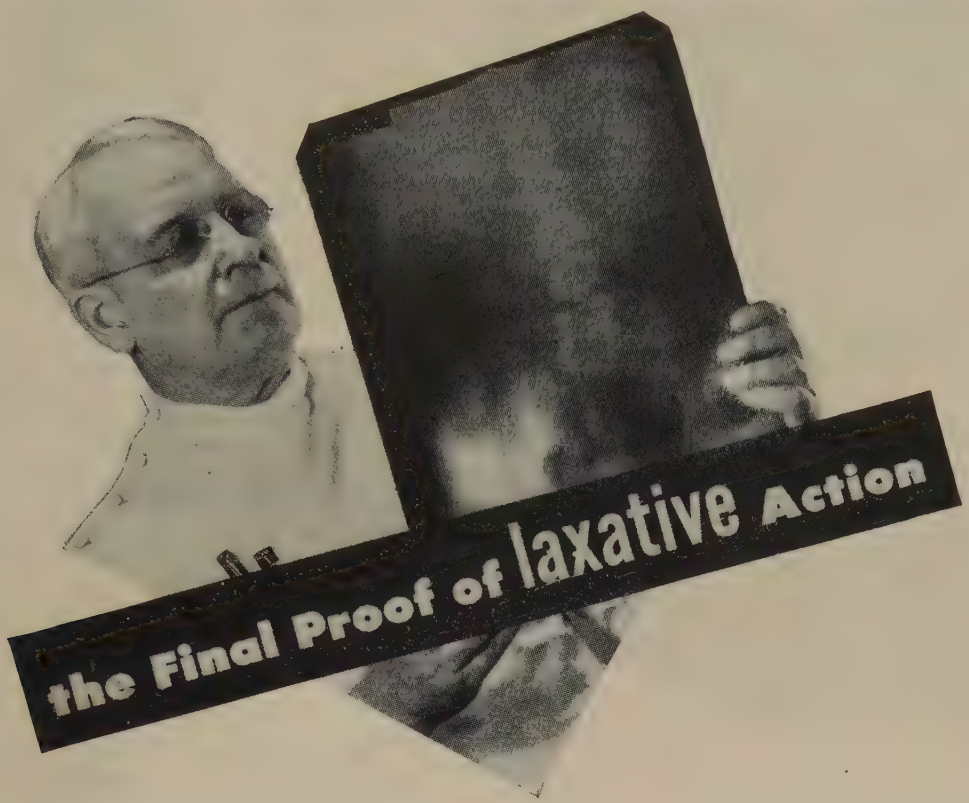

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Directory of Surgical Training Programs

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The total number of approved training plans in the 289 hospitals is 228 in general surgery and 522 in the surgical specialties—fractures, plastic surgery, proctology, thoracic surgery, neurological surgery, orthopedic surgery, urology, obstetrics and gynecology (combined and separately), and ophthalmology and otolaryngology (combined and separately). In these 750 training plans in 289 hospitals, approximately two thousand surgeons may be trained, whereas, as the College points out, training facilities for at least five thousand are urgently needed for returning medical veterans whose training in surgery was interrupted by their military service. Dr. Dallas B. Phemister of Chicago is chairman of the committee on graduate training in surgery of the American College of Surgeons, and Dr. Malcolm T. MacEachern, associate director and chairman of the administrative board, is in general charge of the department, aided by Dr. George H. Miller, director of educational activities, Major General Charles R. Reynolds, consultant in graduate training in surgery, and Dr. Paul S. Ferguson, director of surveys. The expanded program has been made possible through the financial aid of a number of industrial organizations.

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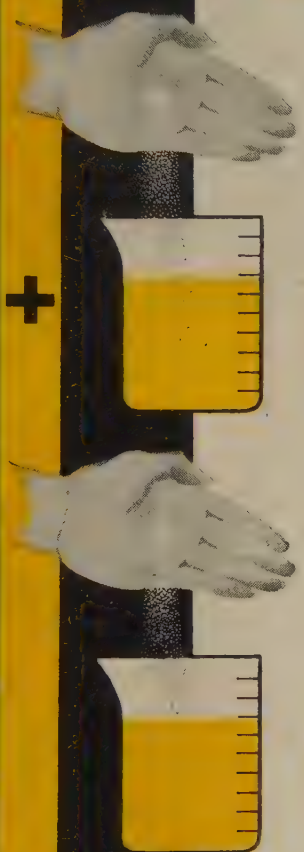

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1. Lehr, D.: Proc. Soc. Exper. Biol. & Med. *58*:11, 1945.
2. Lehr, D.: In press.

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Intravenous Sodium Pentothal Anesthesia

Cleveland H. Shutt (*Surgery*, July 1945) presents a report on the use of intravenous sodium pentothal as a general anesthetic in major surgical cases at the Missouri Baptist Hospital, St. Louis. Since June 3, 1942, when the method was first used at this hospital, until October 1944, when this report was prepared, it had been used in a grand total of 2,287 cases. The ages of the patients ranged from seven to ninety-two years. It was used in every type of major surgical case, excluding lung resection. It was used in head and neck cases, goiters, breast resection, and all types of major abdominal operations including common duct stones with jaundice and some with high nonprotein nitrogens, shock and low hemoglobin cases, which were suitable for any other general anesthetic agent. There were no deaths traceable to this anesthetic, no thrombosis, nor local necroses. Morphine and atropine were used at times, but hyoscine and morphine were usually given in suitable doses according to the age of the patient and his general condition about thirty to forty minutes before operation, and a sleeping dose of some barbiturate the night before operation.

In the beginning, a five percent solution was used, which was soon changed to a two and one half percent solution because of prolonged sleeping periods after operation. The dosage has ranged from two and one half to forty-five grains in one case, and anesthesia has been maintained up to four hours without ill effect. Relaxation was satisfactory, and there was practically no postoperative nausea. The agent is nonexplosive and the equipment required is simple and inexpensive. The Thomas apparatus was used. Complete anesthesia with good relaxation is obtained in from ten to thirty seconds and usually after having used from two and one half to seven and one half grains of pentothal in two and one half percent solution. Alcoholics and some other types require heavier initial dosage. The author describes the technic of administering this form of anesthesia and emphasizes the importance of well trained anesthetists.

In conclusion, he said: "It is our considered judgment that sodium pentothal can be used safely in major surgery and to greater advantage than any other anesthetic agent now available. Careful records have been made and are available in all cases. Relaxation depends entirely upon the skill of the anesthetist. It is easy to maintain perfect relaxation."

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The Lasker Award

At the thirty-sixth annual meeting of the National Committee for Mental Hygiene, held recently in New York, the Lasker Award for outstanding service in the field of rehabilitation was conferred jointly upon Dr. John Rawlings Rees, consultant in psychiatry to the directorate of psychiatry of the British Army, and Major General G. Brock Chisholm, Deputy Minister of National Health, Federal Department of National Health and Welfare, Canada. The presentation was made by General Omar N. Bradley, Administrator of Veterans Affairs.

The Lasker Award of $1,000, established in 1944 by the Albert and Mary Lasker Foundation, is given annually through the Committee for meritorious service and significant contributions to promoting mental health and increasing public understanding of mental hygiene. Each year the award is made for distinguished service in some special aspect of the field of mental hygiene which is of current significance. The recipient of the award is chosen by members of a jury anonymous to each other as well as the general public, selected annually for competence to judge accomplishment in a particular field. This year both recipients of the award were equally signalized by the jury.

The first award, given in 1944, was for mental hygiene work related to the war. Colonel William C. Menninger, Chief Consultant in Neuropsychiatry, Office of the Surgeon General, U. S. Army, received the award for work done to enhance the mental health of men and women of the armed services, while in the service and during the period of rehabilitation.

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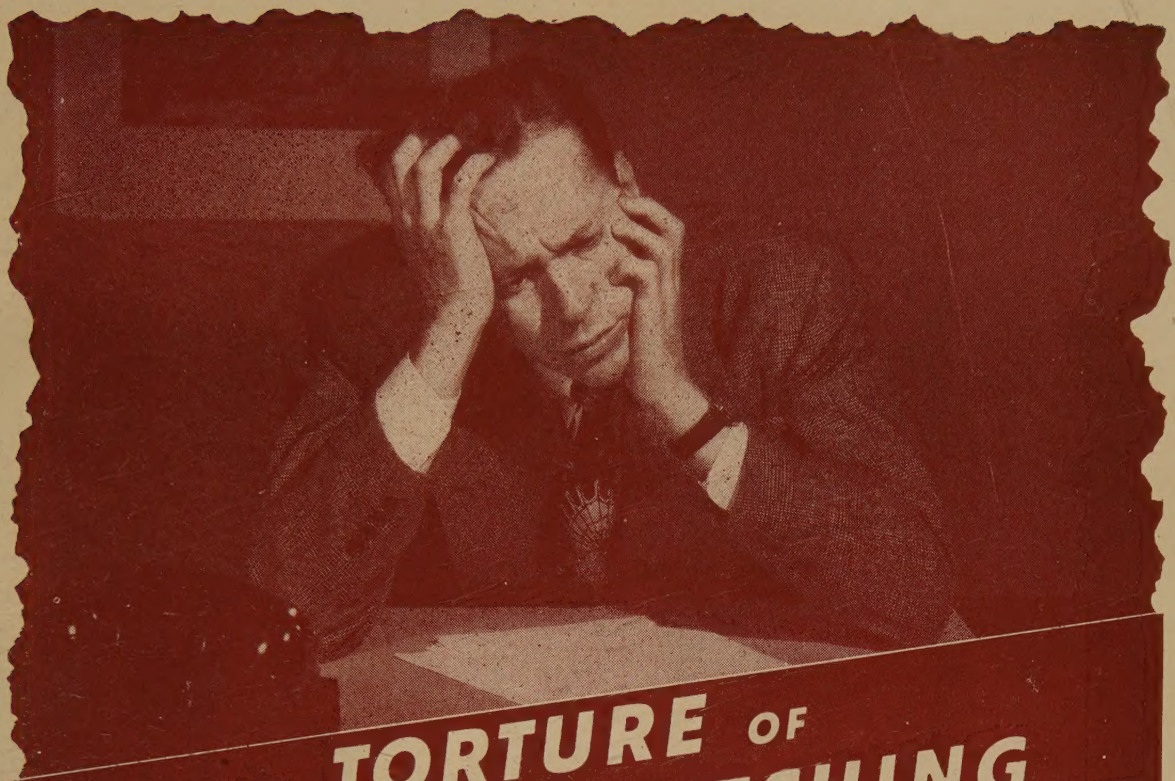

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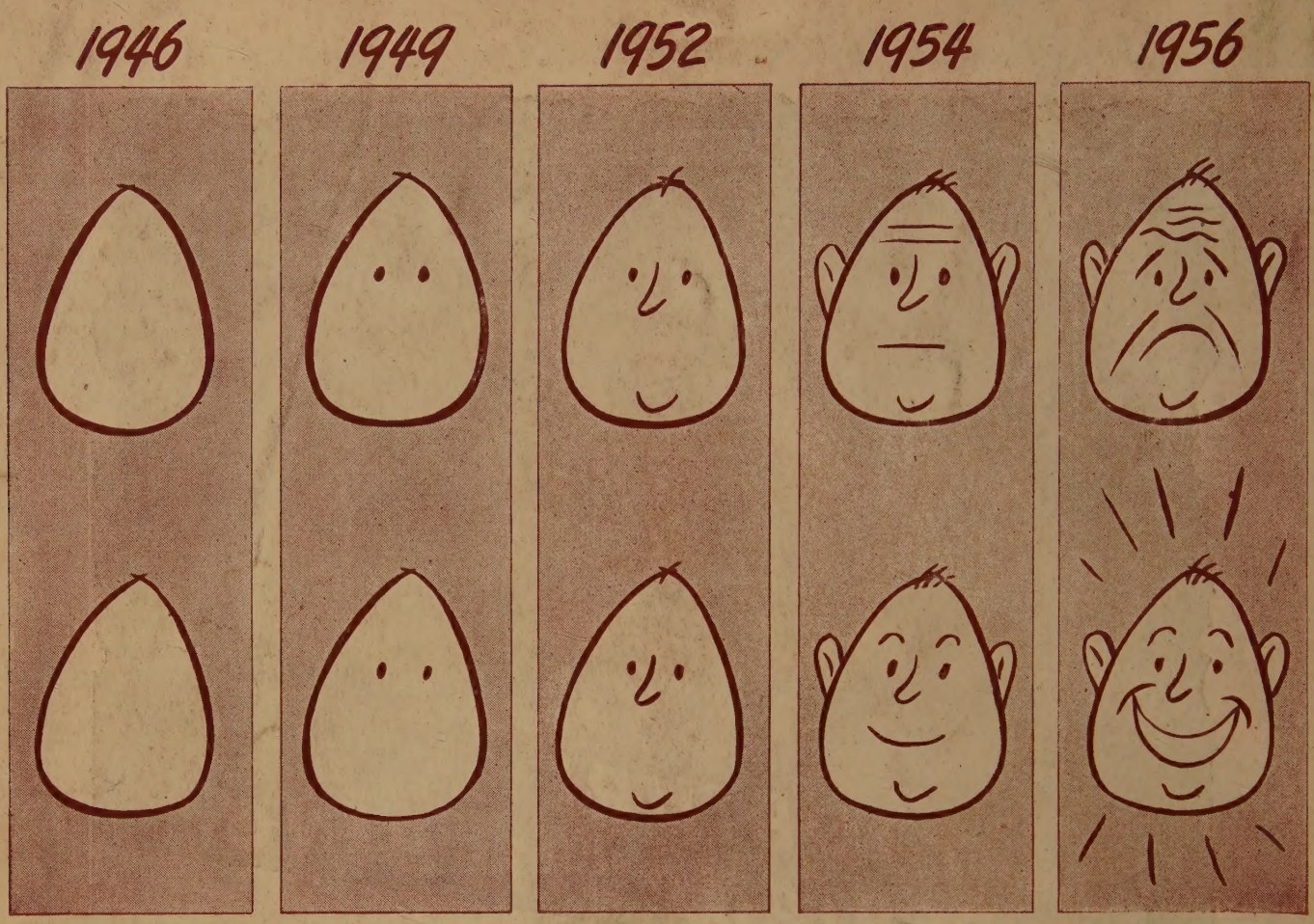

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